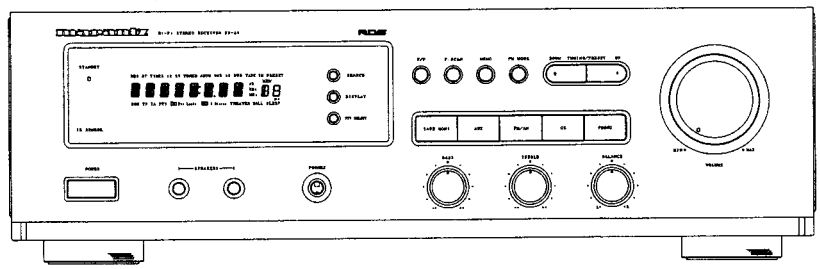
Service Manual

74 SR38 /02B
74 SR48 /02B
SR-48 U

Hi-Fi Stereo Receiver



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Please use this service manual with referring to the user guide (D.F.U.) without fail.

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PCS 99 827

model SR-38/SR-48

4822 725 51184
First issue : 1998/12
236W855010 3K

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FAX : +65 475 - 8623

SHOCK, FIRE HAZARD SERVICE TEST :

CAUTION : After servicing this appliance and prior to returning to customer, measure the resistance between either primary AC cord connector pins (with unit NOT connected to AC mains and its Power switch ON), and the face or Front Panel of product and controls and chassis bottom.
Any resistance measurement less than 1 Megohms should cause unit to be repaired or corrected before AC power is applied, and verified before it is return to the user/customer.
Ref. UL Standard N0. 1492.

In case of difficulties, do not hesitate to contact the Technical Department at above mentioned address.

980902 3K

1. TECHNICAL SPECIFICATIONS

FM Tuner Section

- Frequency Range ..... 87.5 – 108.0 MHz
- Usable Sensitivity ..... IHF 0.77 μV/16.2 dBf
- Signal to Noise Ratio ..... Mono/Stereo 70/65 dB
- Distortion ..... Mono/Stereo 0.3/0.5 %
- Stereo Separation
  - SR-38/02B, SR-48/02B ..... 1 kHz 32 dB
  - SR-48U ..... 1 kHz 45 dB
- A.C.S. ..... ±400 kHz 50 dB
- Image Rejection ..... 98.1 MHz 40 dB
- Tuner Output Level ..... 1 kHz, ±75 kHz DEv 600 mV

AM Tuner Section

- Frequency Range
  - SR-38/02B, SR-48/02B ..... 522 – 1611 kHz
  - SR-48U ..... 520 – 1710 kHz
- Usable Sensitivity
  - SR-38/02B, SR-48/02B ..... Loop 800 μV
  - SR-48U ..... Loop 500 μV
- Signal to Noise Ratio
  - SR-38/02B, SR-48/02B ..... 40 dB
  - SR-48U ..... 45 dB
- Distortion ..... 1 kHz, 30% Mod. 1.0%
- Selectivity
  - SR-38/02B, SR-48/02B ..... ±20 kHz 70 dB
  - SR-48U ..... ±10 kHz 25 dB

Audio Section

- Rated Power
  - SR-48 ..... 20 Hz – 20 kHz 8Ω 50 W/Ch
  - SR-38 ..... 40 Hz – 20 kHz 8Ω 30 W/Ch
- THD
  - SR-48 ..... 20 Hz – 20 kHz 8Ω 0.09 %
  - SR-38 ..... 40 Hz – 20 kHz 8Ω 0.09%
- Input Sensitivity/Impedance
  - Linear ..... 220 mV/47 kΩ
- Signal to Noise Ratio (IHF A)
  - Linear ..... 90 dB

Others

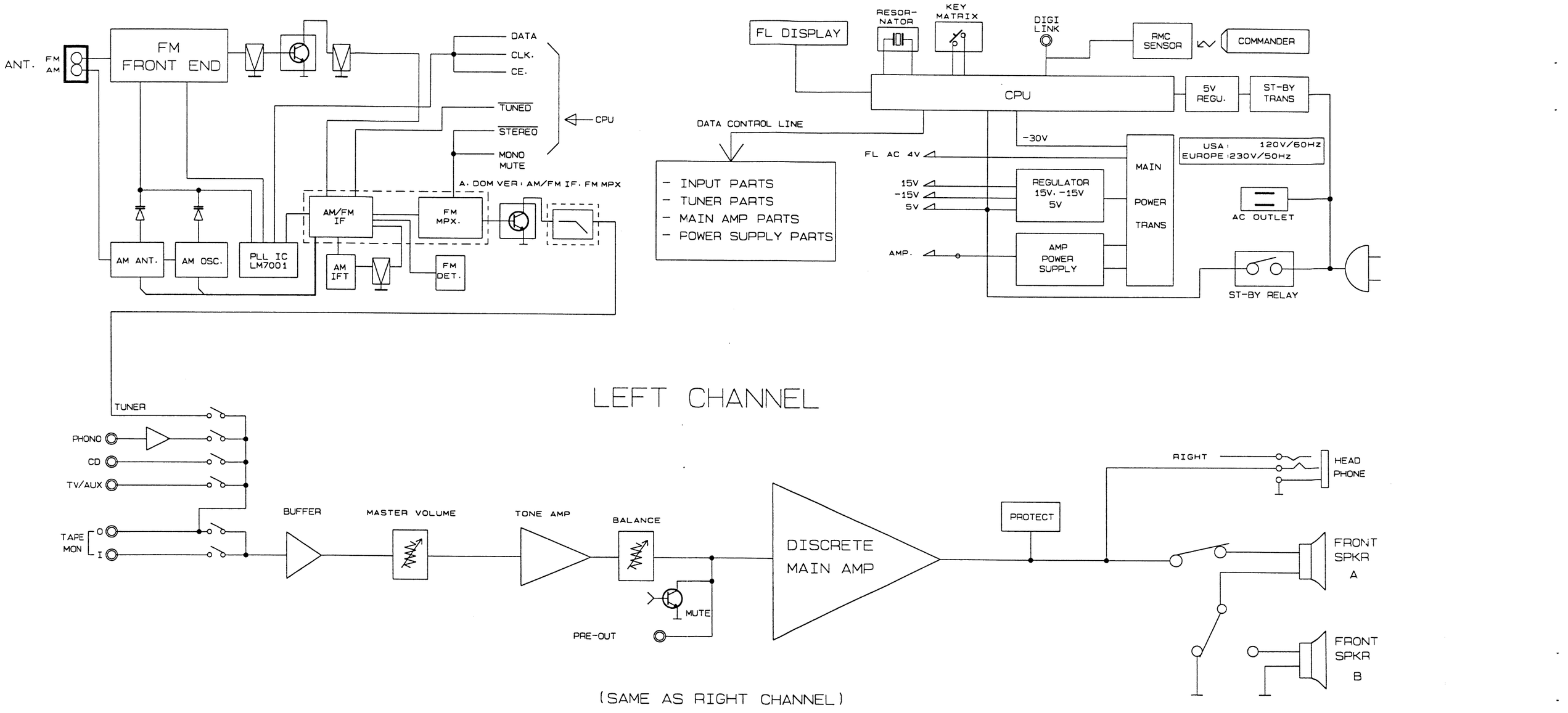
- Power Supply
  - SR-38/02B, SR-48/02B ..... AC 230V 50 Hz
  - SR-48U ..... AC 120V 60 Hz
- Power Consumption
  - SR-38/02B, SR-48/02B 2.1A
  - SR-48U 1.1A

Dimensions (MAX)

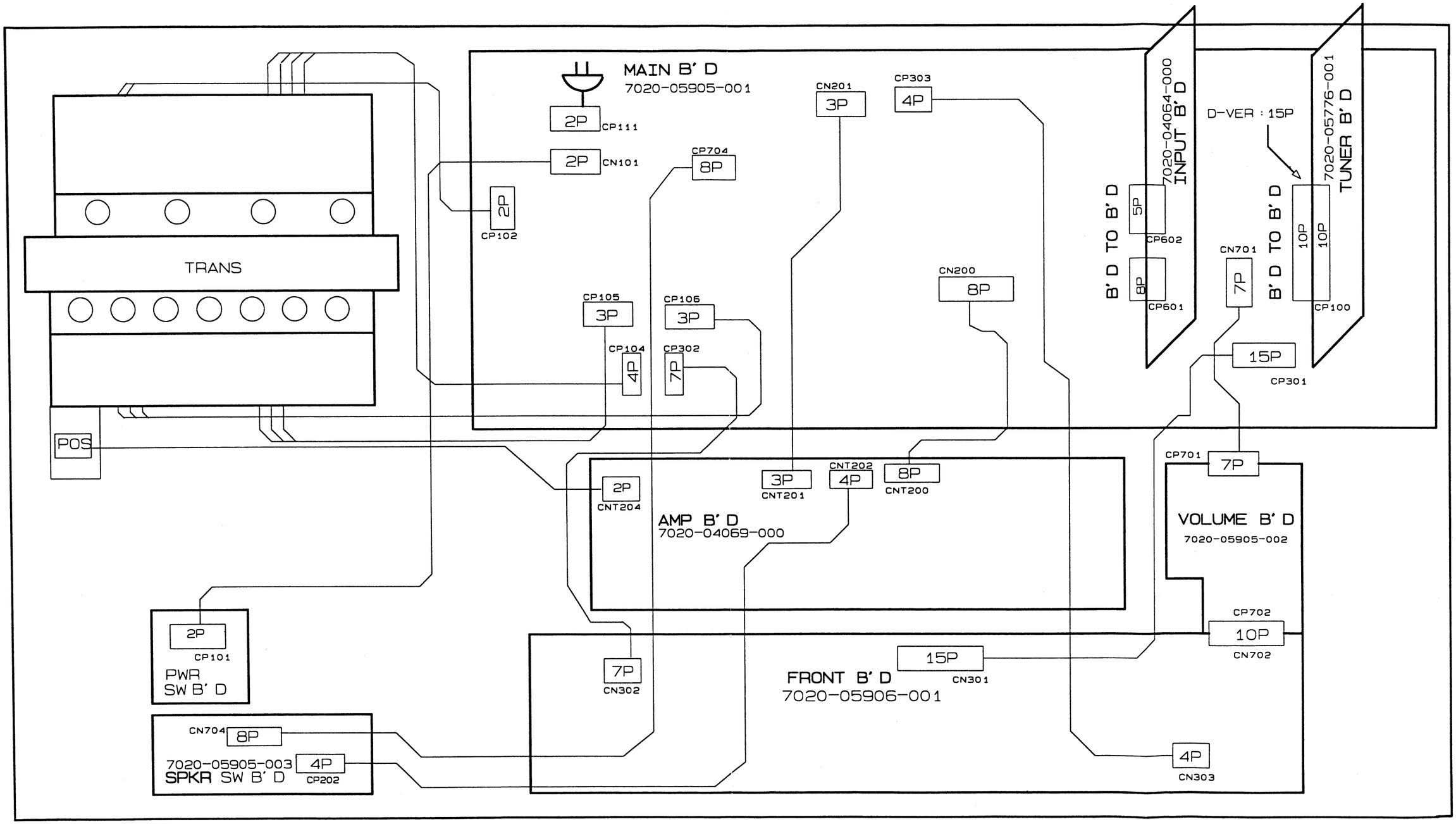
- Width ..... 17-1/4 inches (439 mm)
- Height ..... 5-1/2 inches (140 mm)
- Depth ..... 13-3/8 inches (340 mm)
- Weight ..... 15 lbs (6.8 kg)

Specifications are subject to change without notice.

2. BLOCK DIAGRAM



3. WIRING DIAGRAM



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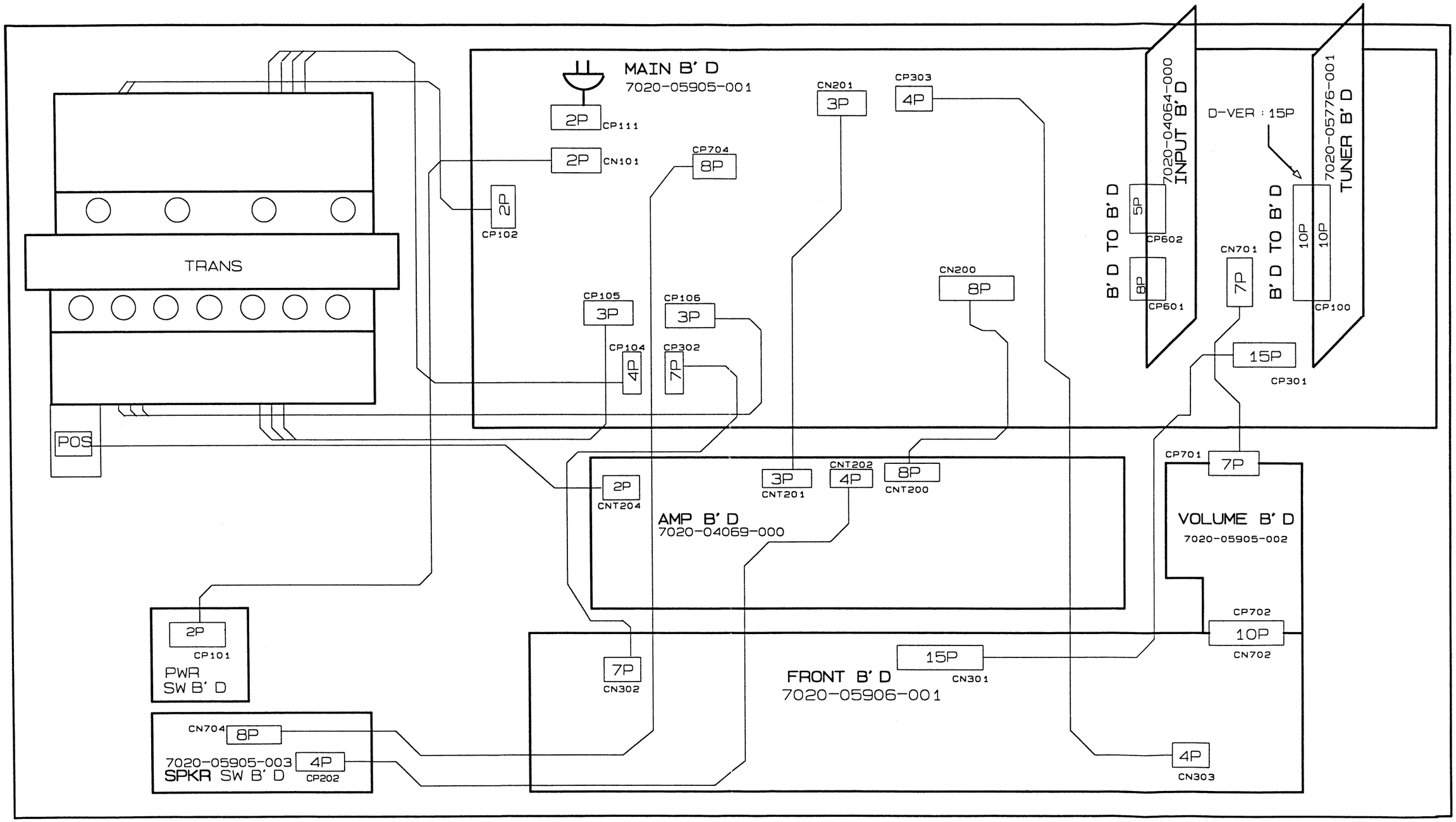
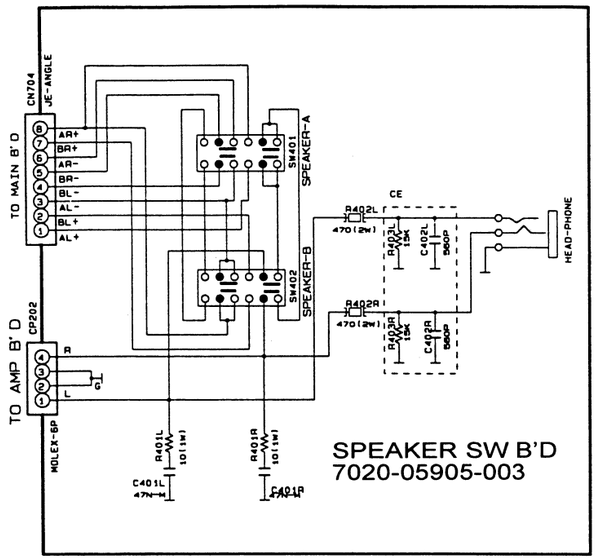
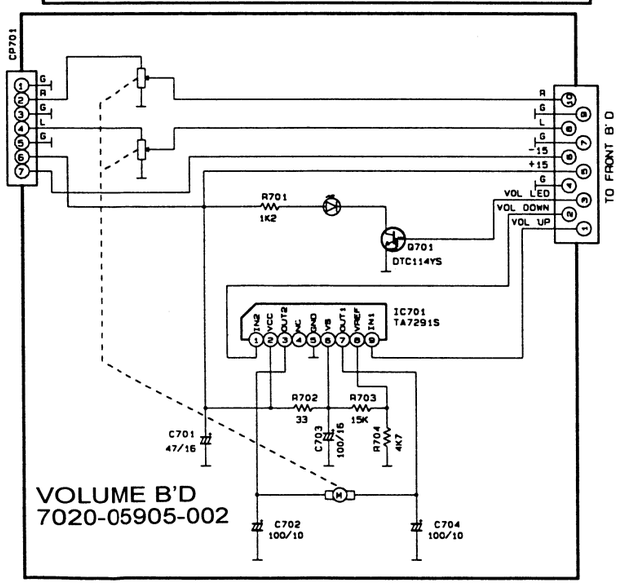
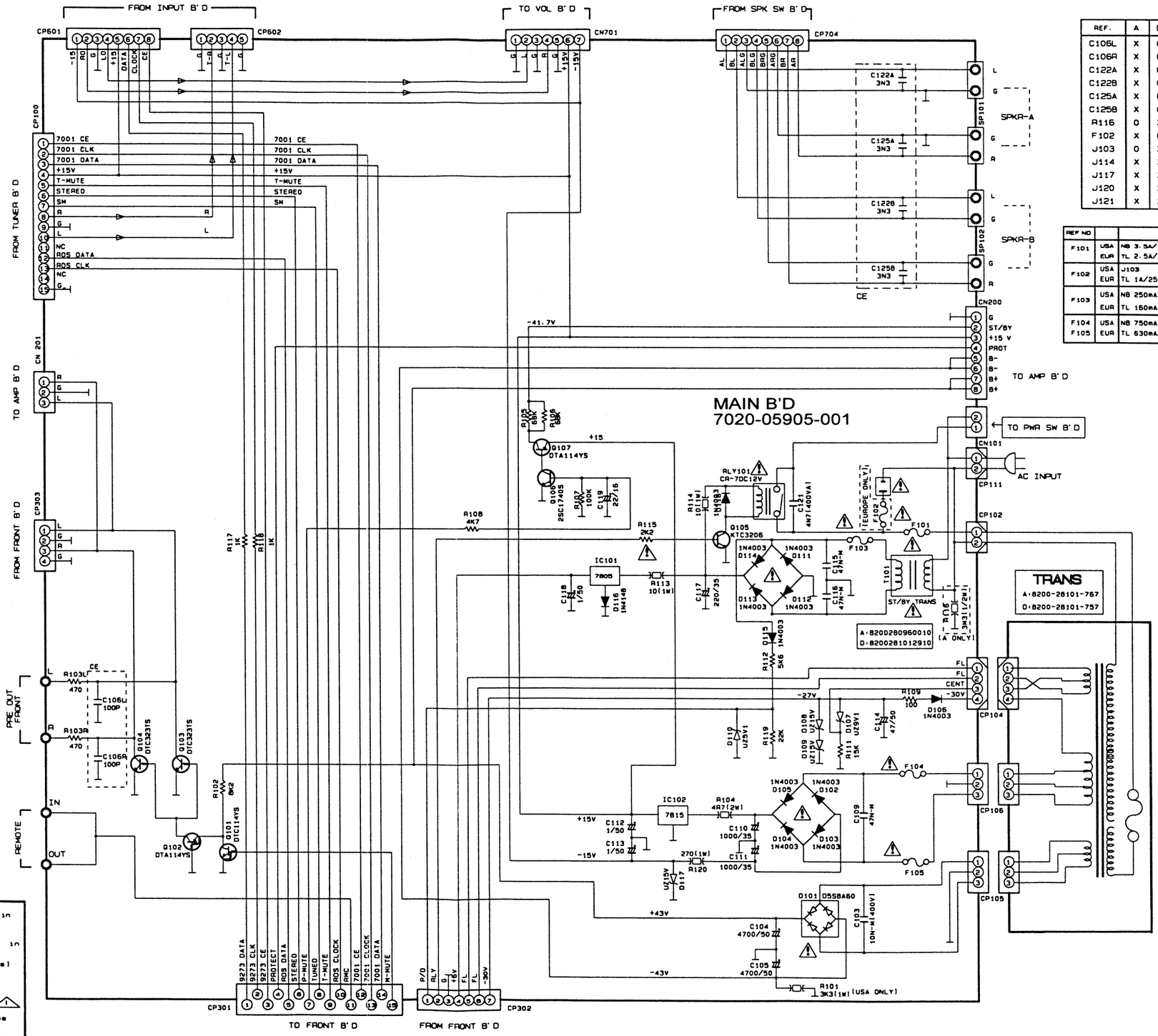


4. SCHEMATIC DIAGRAMS AND PARTS LAYOUTS

MAIN, SPEAKER AND VOL BOARDS CIRCUIT DIAGRAMS







REF.	A	D
C106L	X	O
C106R	X	O
C122A	X	O
C122B	X	O
C125A	X	O
C125B	X	O
R116	O	X
F102	X	O
J103	O	X
J114	X	X
J117	X	X
J120	X	X
J121	X	X

REF NO		
F101	USA	NB 3.5A/125V
	EUR	TL 2.5A/250V
F102	USA	J103
	EUR	TL 1A/250V
F103	USA	NB 250mA/125V
	EUR	TL 160mA/250V
F104 F105	USA	NB 750mA/125V
	EUR	TL 630mA/250V

NOTES

1. Resistor values are indicated in ohms unless otherwise specified (K=1.000 M=1.000.000)
2. Capacitor values are indicated in microfarades unless otherwise specified. (p=micro-microfarades)

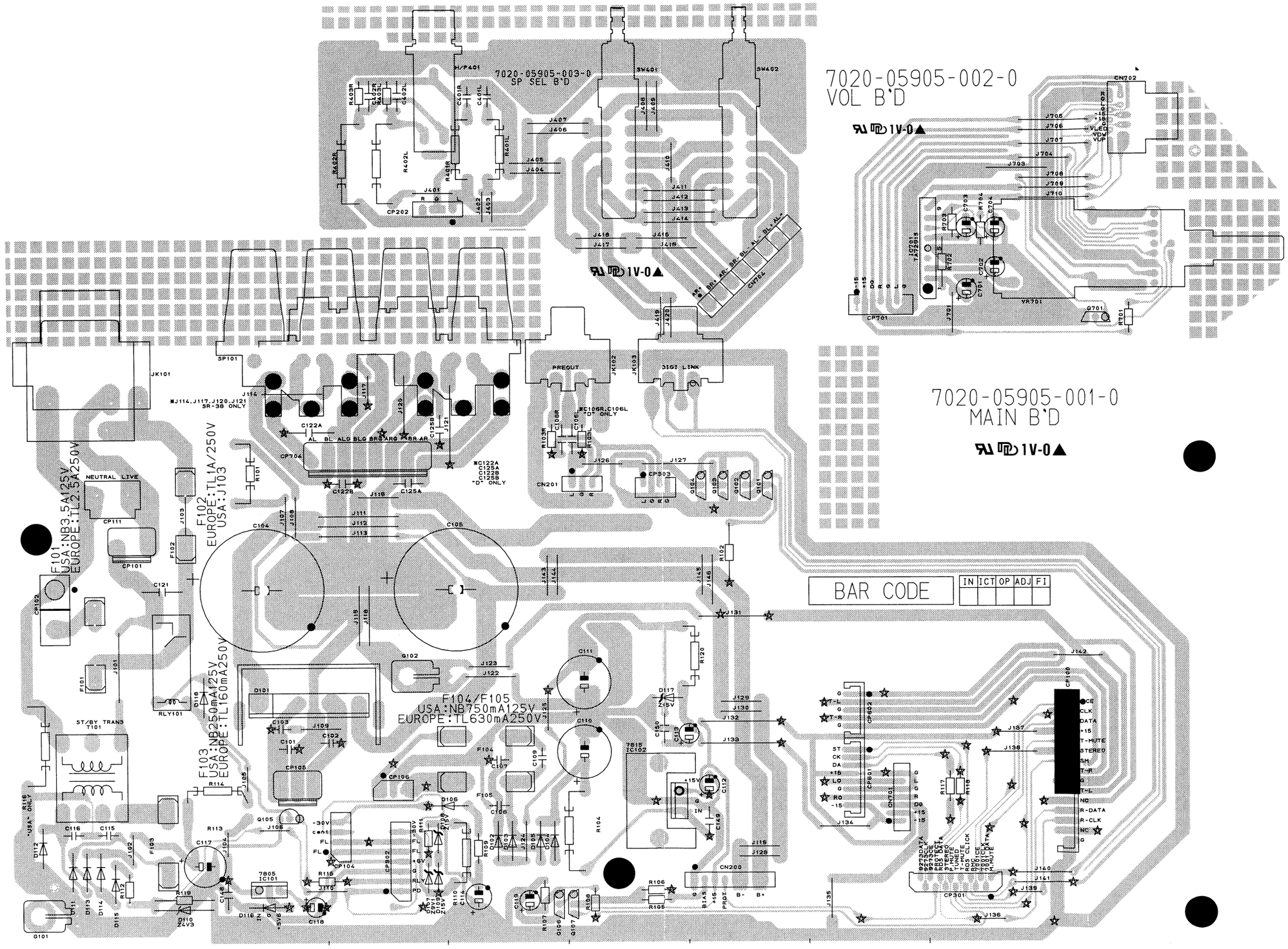
CAUTION

Safety precaution to be followed during servicing

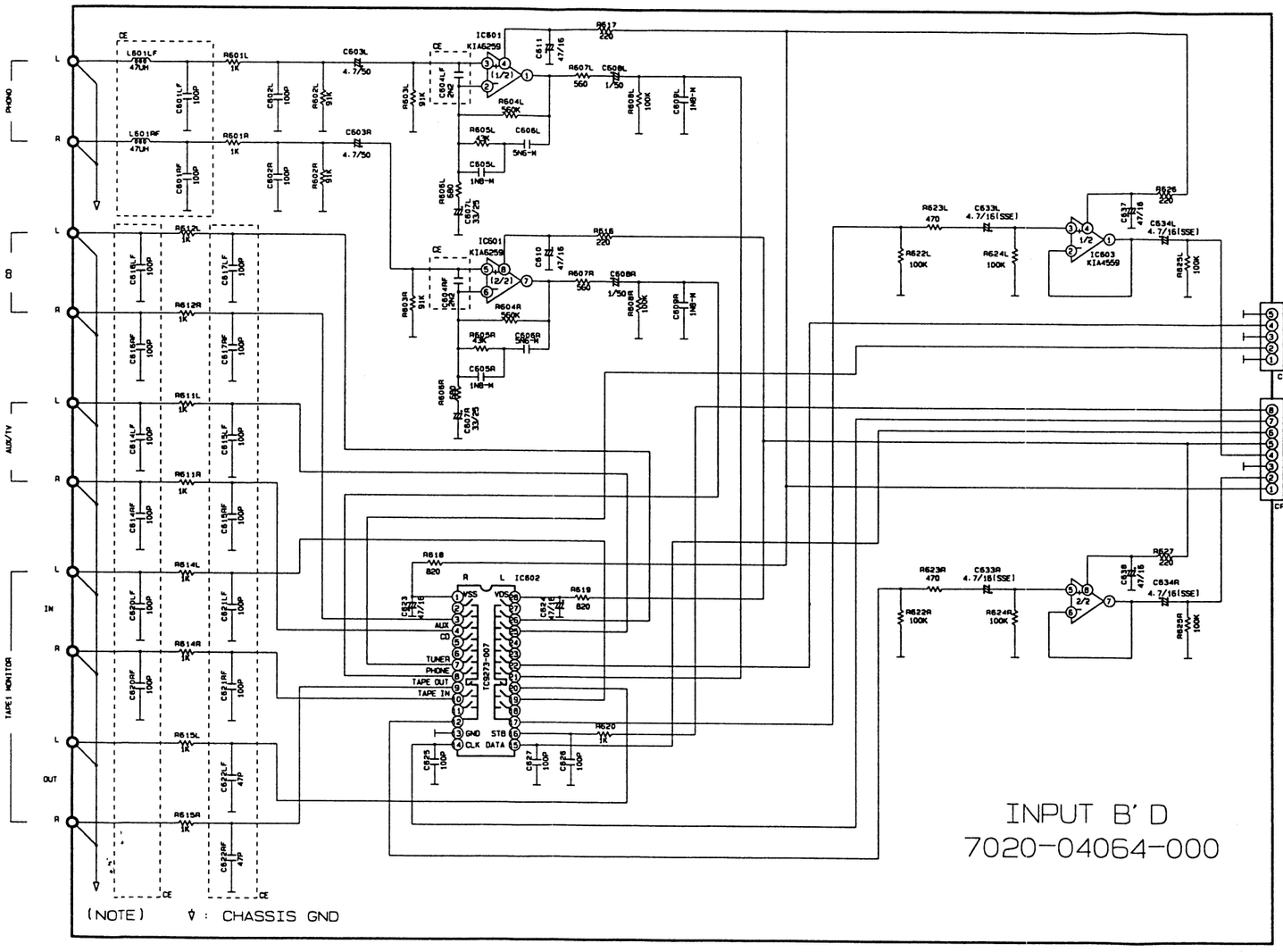
1) Since those parts marked with ⚠ are critical parts for safety, use only the one described in the parts list

2) Before returning the set to the customer make appropriate leakage current or resistance measurements to determine the exposed parts are properly insulated from the supply circuit.

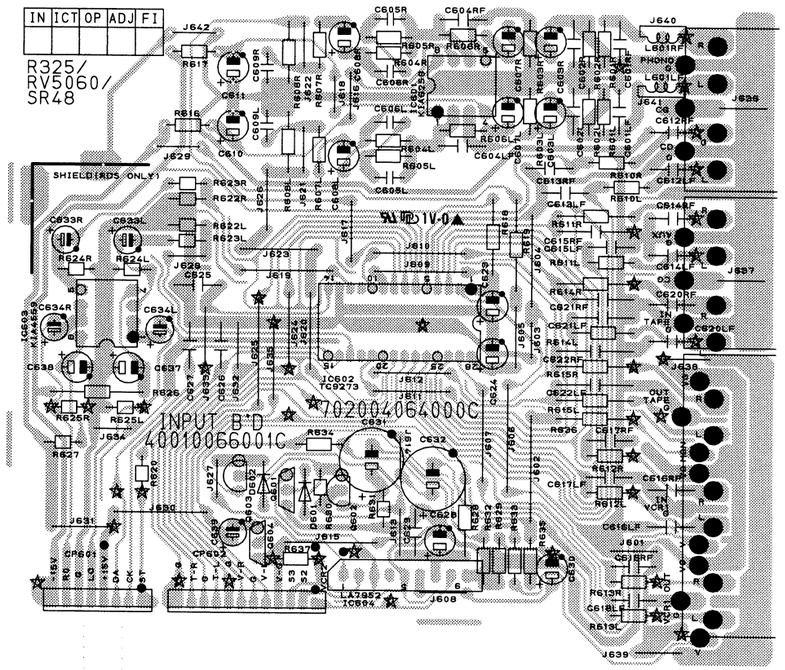
MAIN, SPEAKER AND VOL BOARDS LAYOUT DIAGRAMS



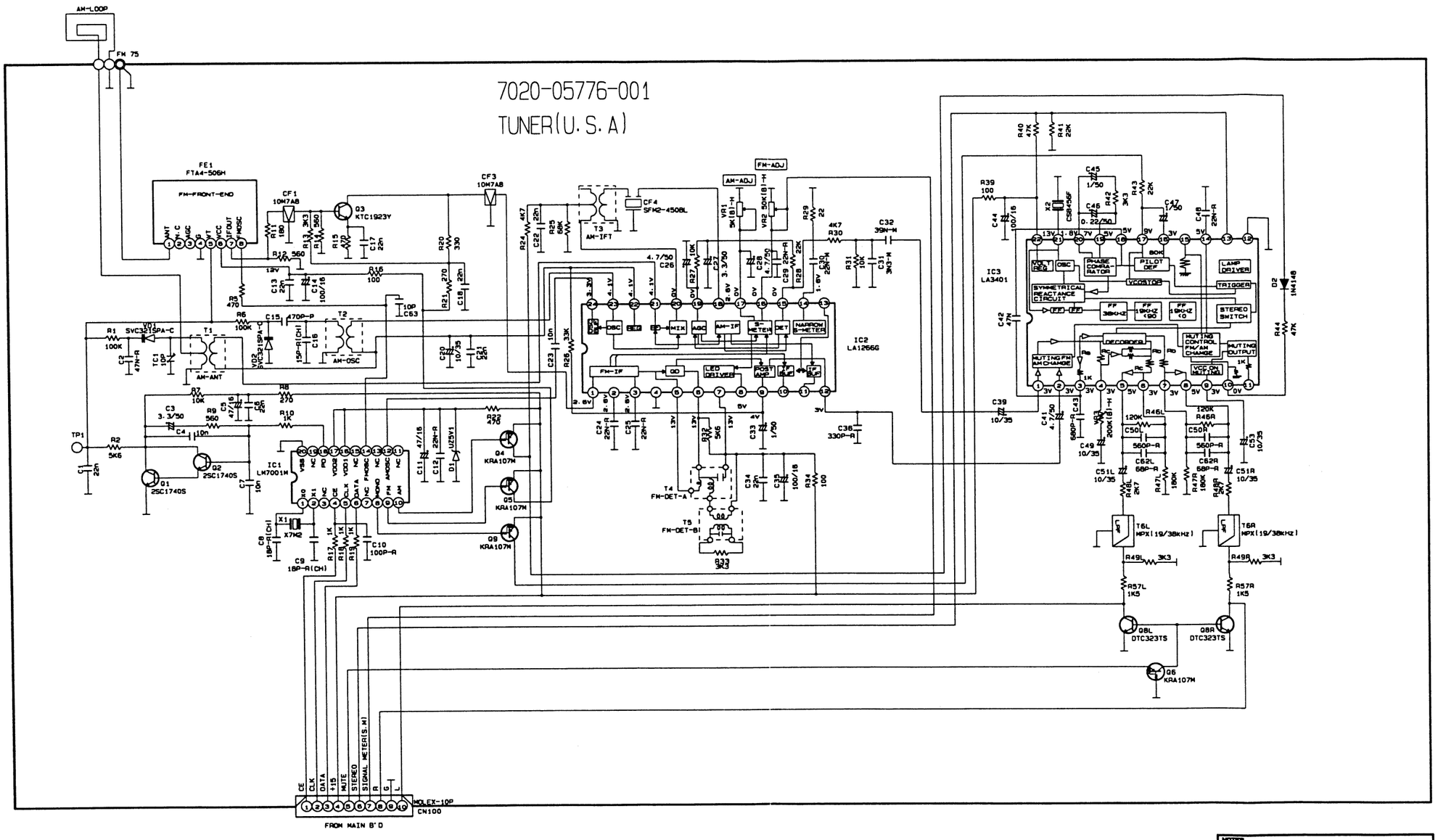
INPUT BOARD CIRCUIT DIAGRAM



INPUT BOARD LAYOUT DIAGRAM



TUNER (U.S.A.) BOARD CIRCUIT DIAGRAM



NOTES

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2. Capacitor values are indicated in microfarades unless otherwise specified. (p=micro-microfarades)

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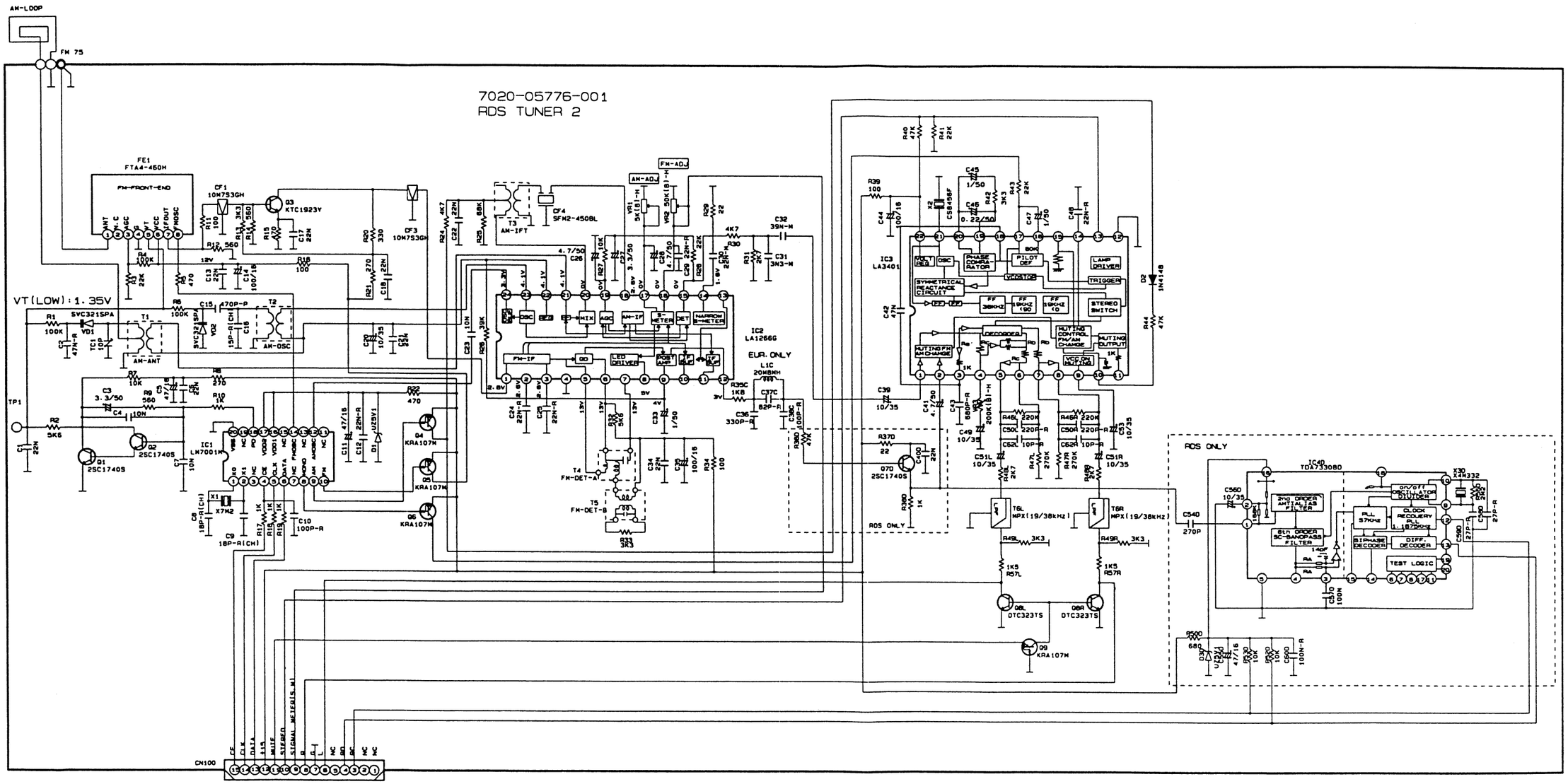
TUNER (/02B) BOARD CIRCUIT DIAGRAM



NOTES

1. Resistor values are indicated in ohms unless otherwise specified [K=1,000 M=1,000,000]
2. Capacitor values are indicated in microfarades unless otherwise specified. [p=micro-microfarades]

CAUTION

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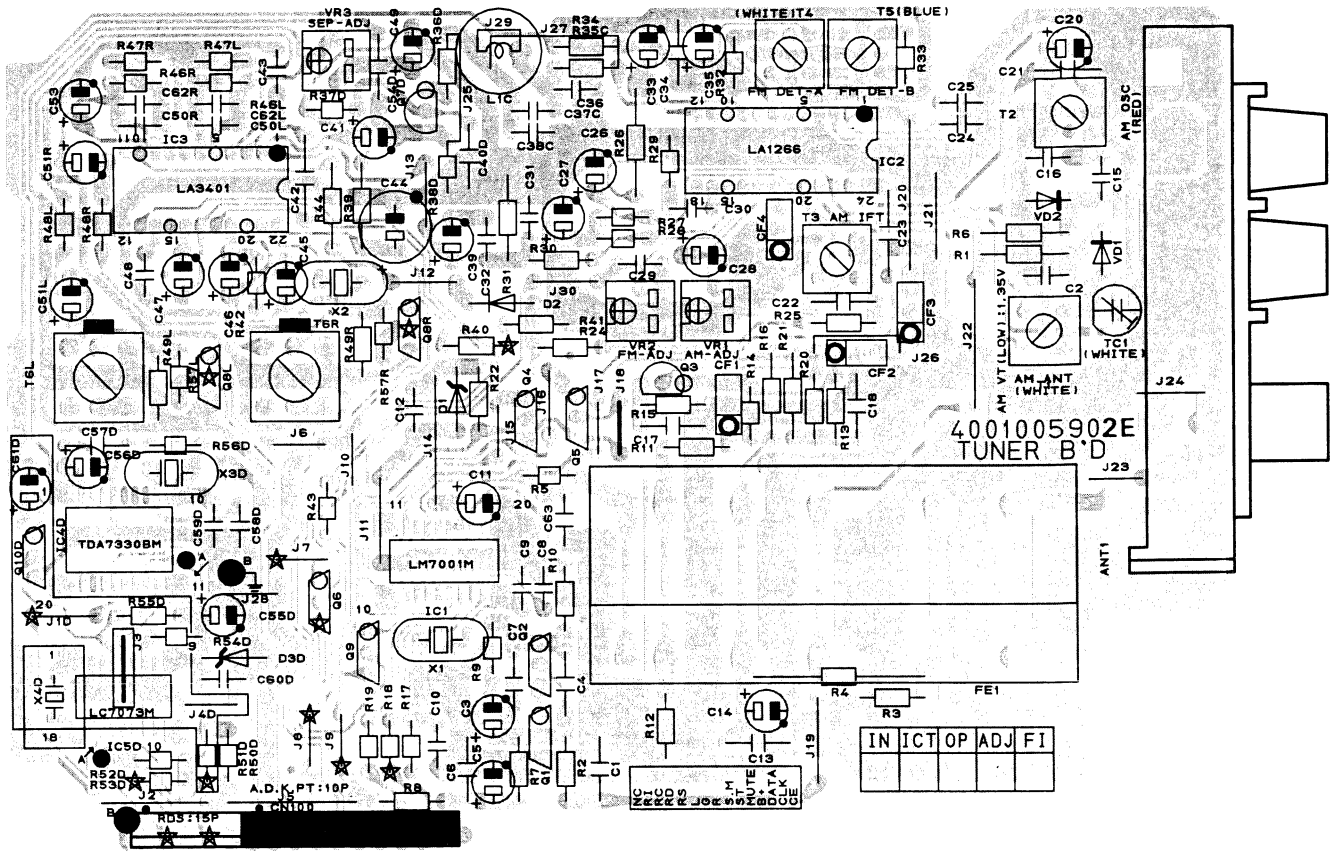
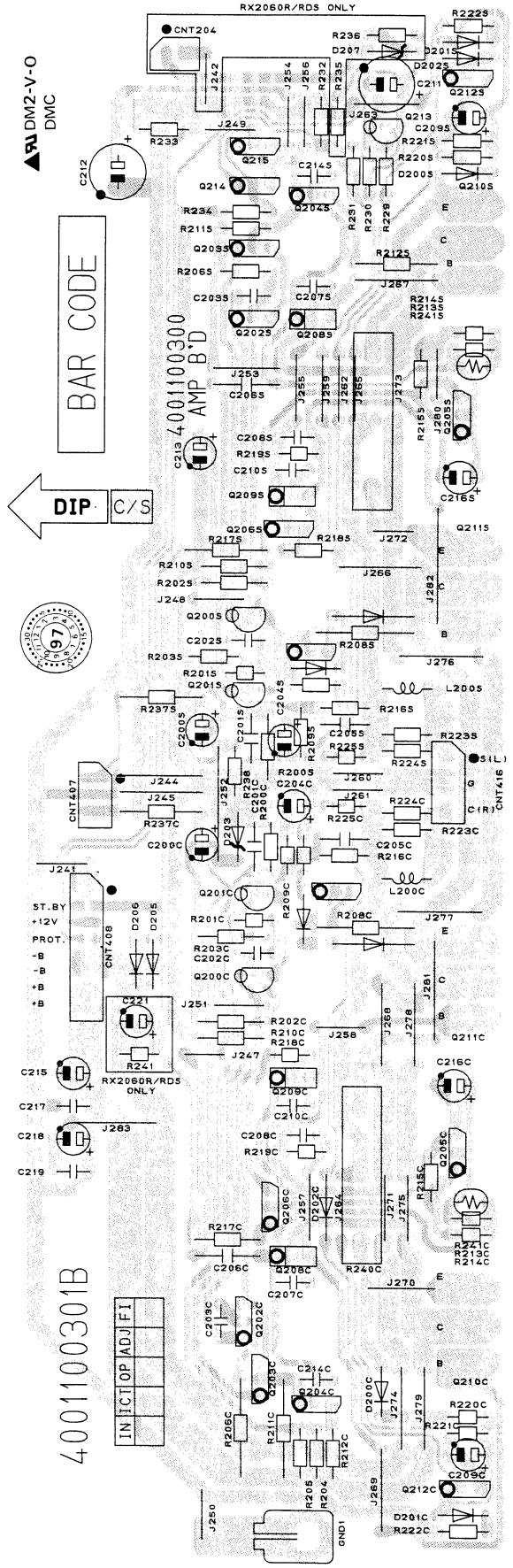
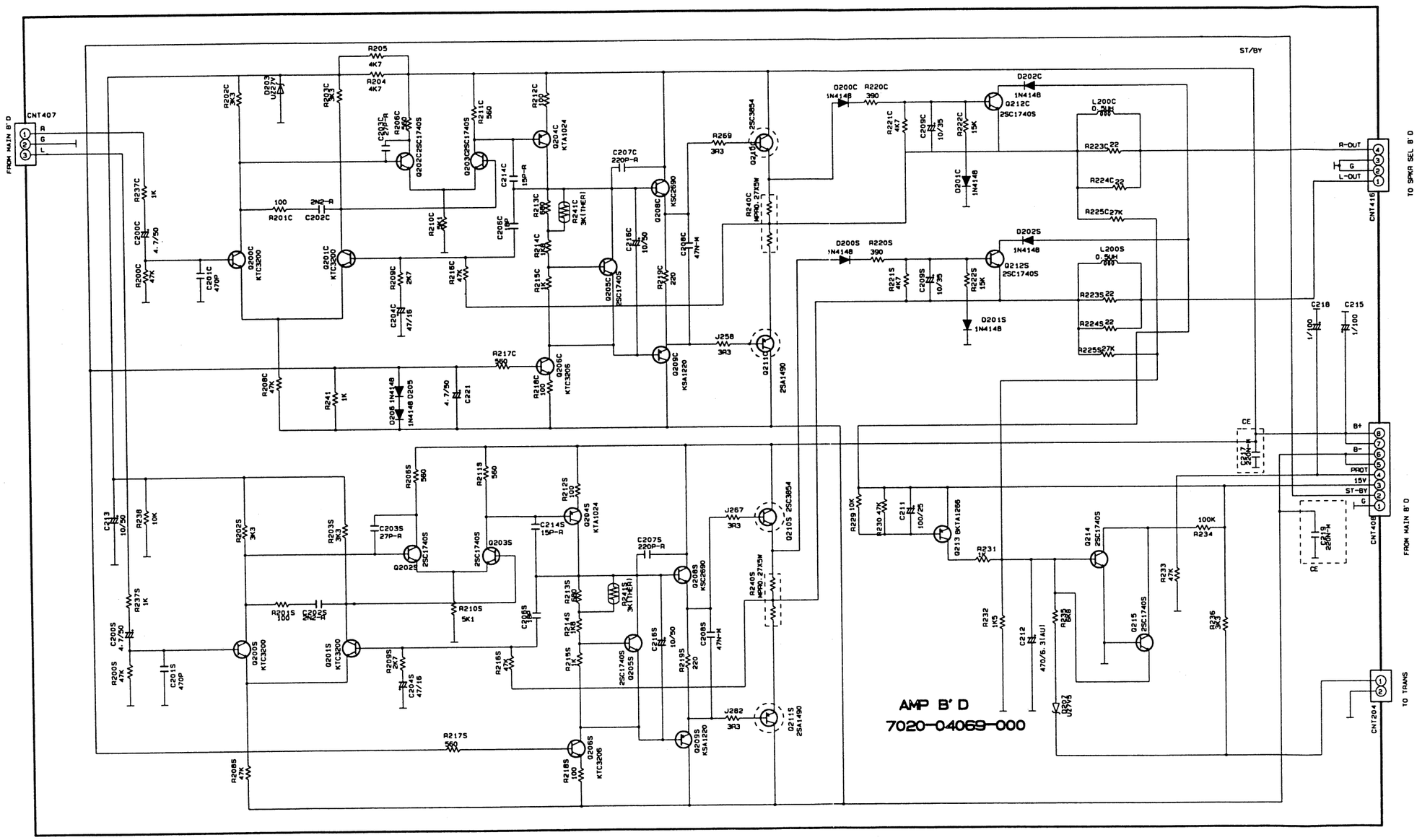
TUNER BOARD LAYOUT DIAGRAM



AMP BOARD LAYOUT DIAGRAM



AMP BOARD CIRCUIT DIAGRAM



NOTES

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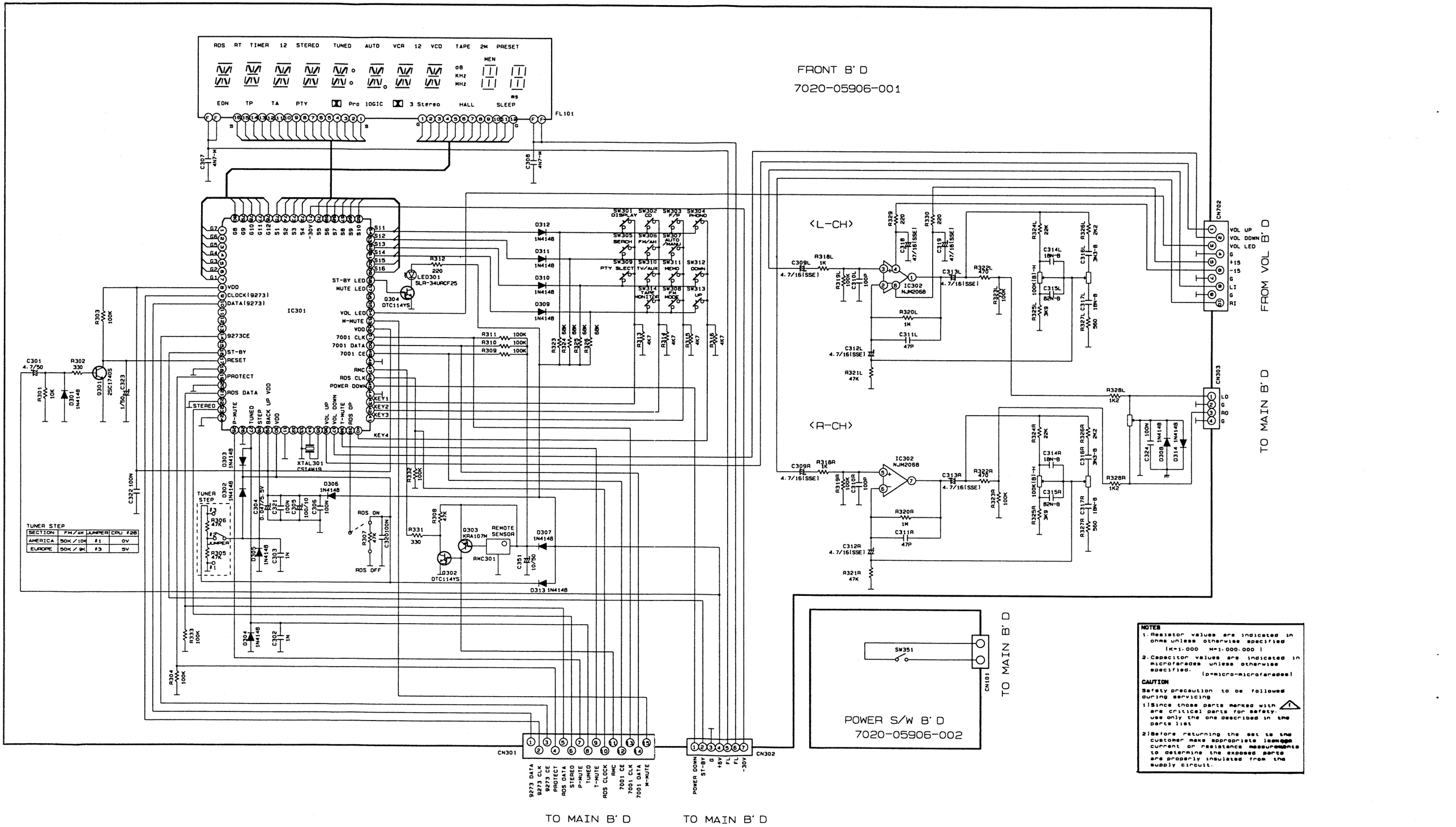
FRONT AND POWER SW BOARDS CIRCUIT DIAGRAMS



TUNER STEP

SECTION	FM/AM	JUMPER	CPU #28
AMERICA	50K / 10K	#1	0V
EUROPE	50K / 9K	#3	5V

NOTES

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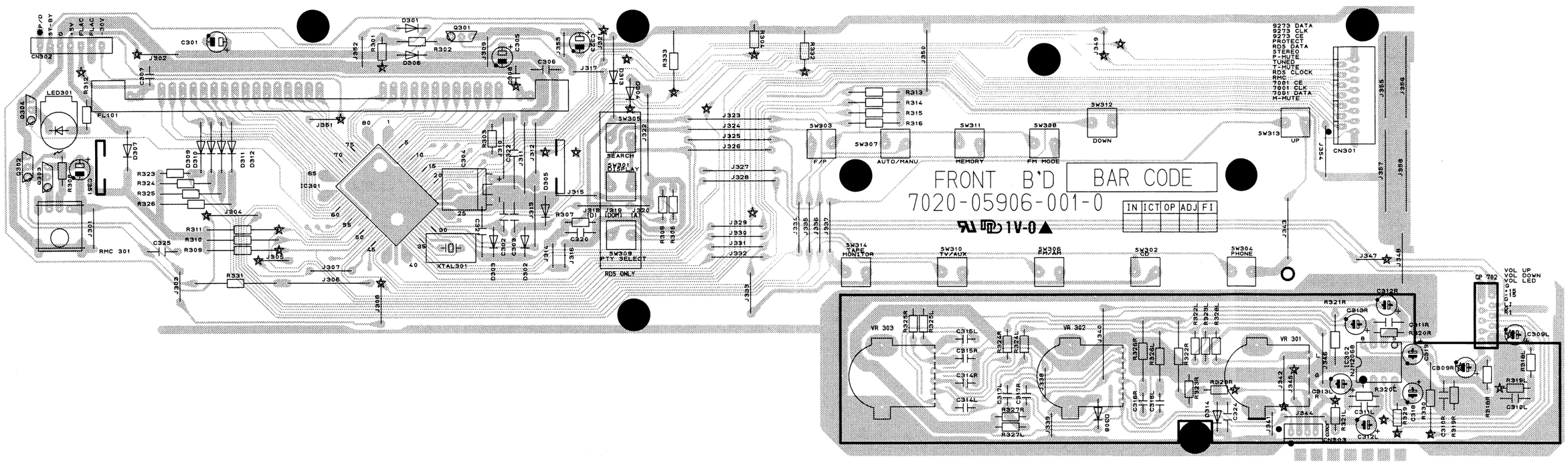
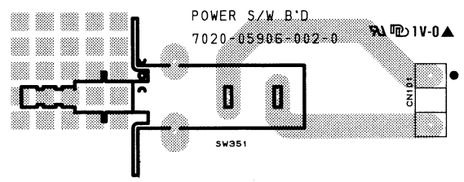
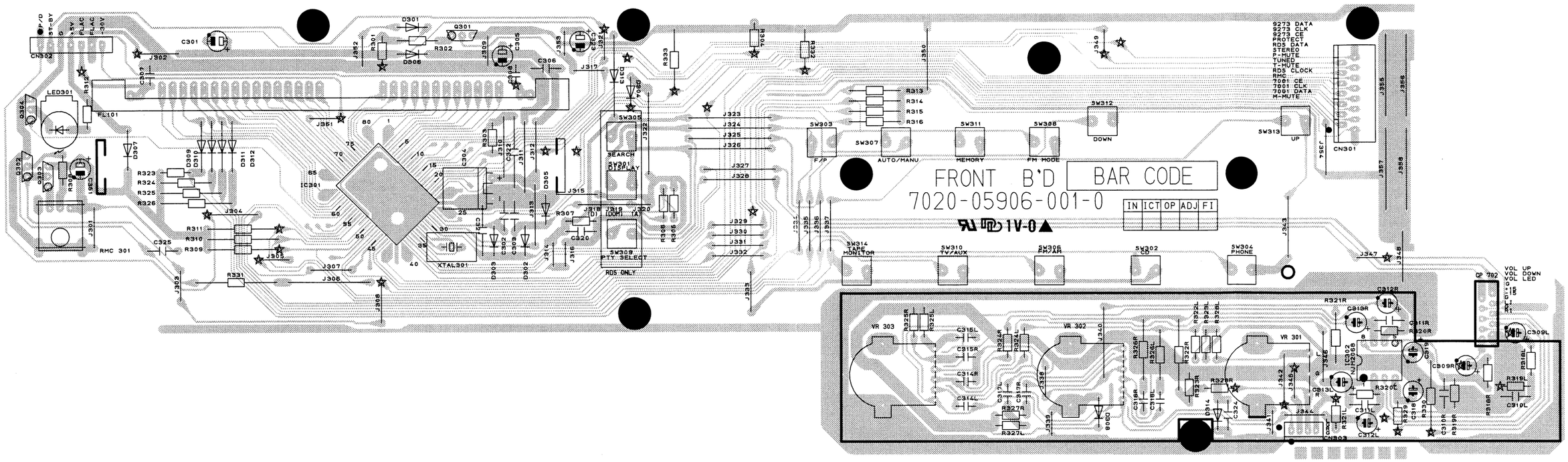
FRONT BOARD LAYOUT DIAGRAM



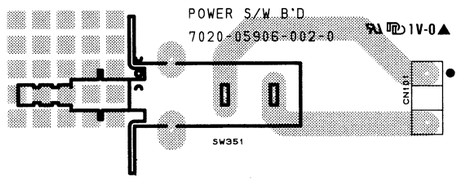
POWER SW BOARD LAYOUT DIAGRAM



FRONT BOARD LAYOUT DIAGRAM



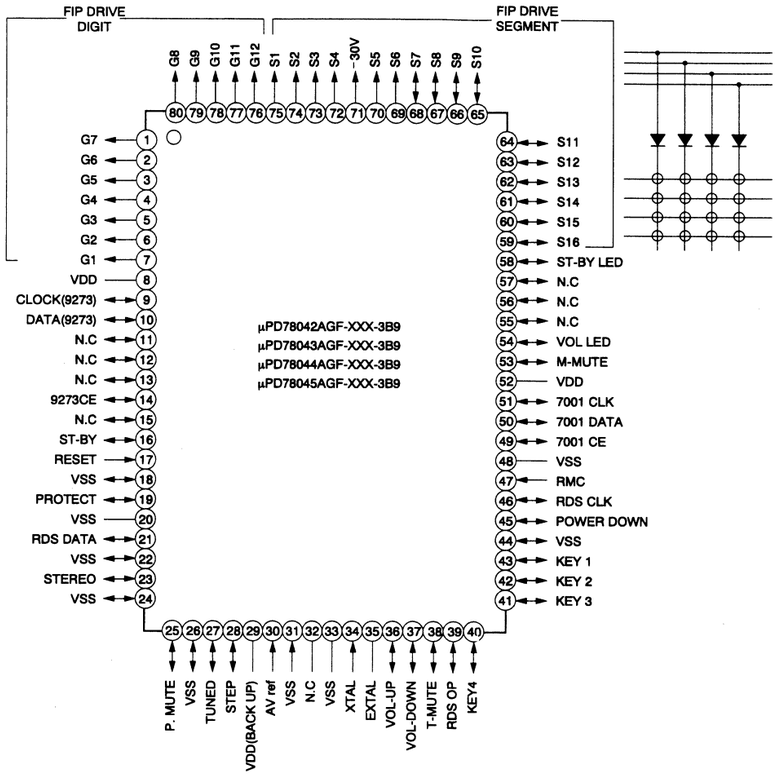
POWER SW BOARD LAYOUT DIAGRAM



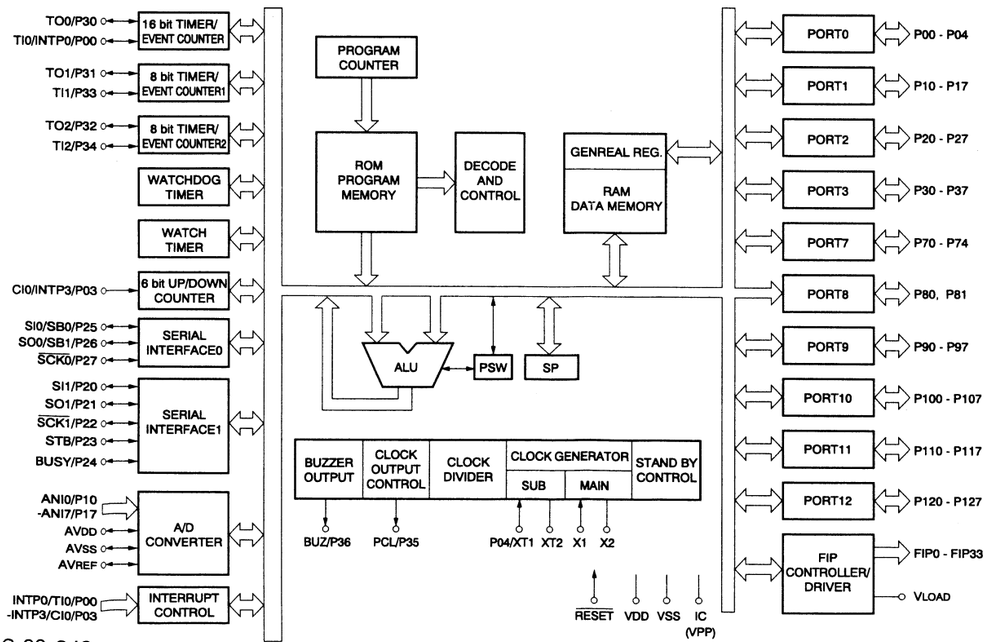
5. COMPONENT DESCRIPTIONS

IC301: μPD78042AGF (8 bit CMOS Microprocessor)

1. Pin Configuration



2. Block Diagram



3. Pin Functions

Pin No.	Symbol	Description
1 – 7	G_1 – G_7	Grid signal output for FIP.
8	V_{DD}	+5V power supply.
9/10	CLK/DATA	CLOCK/DATA output for TC9273.
11 – 13	NC	Not used!
14	TC9273	Chip enable output for TC9273.
15	NC	Not used!
16	ST-BY	When the power is on, control data output is "H". When the power is off, control data is "L". Last memory function is activated.
17	RESET	Input to for resetting CPU (At "H" it is active.)
18	V_{SS}	Ground.
19	PROTECT	Signal input for protection. If it is low, all channel mute signal levels are turned to high to protect speakers and this unit. At abnormal condition, after 3 seconds elapses, it does check protection.
20	V_{SS}	Ground.
21	RDS DATA	RDS DATA input for LC7073.
22	V_{SS}	Ground.
23	STEREO	Input for lighting the STEREO indicator. (At "L", it is active.)
24	V_{SS}	Ground.
25	P. MUTE	Output for all amplifier mute. Output is high level under the following conditions. 1. When power is turned on or off. 2. When the protection terminals level is high.
26	V_{SS}	Ground.
27	TUNED	Input for detecting station during tuning. If "L" is input during tuning, tuning stops at that frequency.
28	STEP	TUNER STEP FM/AM / JUMPER / Voltage AMERICA / 50k/10k / J320 / 0V EUROPE / 50k/9k / J318 / +5V
29	VDD	+5V power supply.
30	AV ref	Reference voltage. (Connected to +5V, not V_{DD}.)
31	V_{SS}	Ground.
32	NC	Not used!
33	V_{SS}	Ground.
34/35	XTAL/EXTAL	Input and output for crystal oscillator.
36/37	VOL. UP, DOWN	Output signal to turn up or down volume motor. (At "H", it is active.)
38	TUNER MUTE	Output for tuner mute. Output is high level under the following conditions; 1. When power is turned on or off 2. When tuner band is changed. 3. When tuning up or down button is pressed. 4. When preset button is pressed. 5. When displayed preset number is changed during memory scan. 6. When "-∞ mute signal" is received from the commander.
39	RDS OP	RDS ON/OFF. JUMPER / Voltage RDS ON / J316 / +5V RDS OFF / J314 / 0V
40 – 43	KEY_1 – KEY_3	Input data of K_1 ~ K_3 for key scan.
44	V_{SS}	Ground.
45	POWER DOWN	Input for power down. (At "L", it is active.)
46	RDS CLOCK	RDS CLOCK input for LC7073.
47	RMC	Input for remote control signal (At "L", it is active.)
48	V_{SS}	Ground.
49	7001CE	Chip enable signal output for LM7001.
50 – 51	7001 DATA/CLOCK	DATA/CLOCK output for LM7001.
52	V_{DD}	+5V power supply.
53	MAIN MUTE	Output for main mute. Output is low level under the following conditions. 1. When power is turned on or off. 2. When function is changed. 3. When "-∞ mute signal" is received from the commander.
54	VOLUME LED	Output for driving volume LED. (At "H", it is active.)
55 – 57	NC	Not used!
58	ST-BY LED	Output for driving volume LED. (At "H" , it is active.)
59 – 70	S_{16} – S_5	Segment signal output for FIP.
71	Vload	-27V power supplyu for FIP.
72 – 75	S_4 – S_1	Segment signal output for FIP.
76 – 80	G_{12} – G_8	Segment signal output for FIP.

4. Key Matrix

IN \ OUT	K. SCAN PIN 61	K. SCAN PIN 62	K. SCAN PIN 63	K. SCAN PIN 64
KEY IN1 PIN 40	TUNING UP	TUNING DOWN	——	PHONO
KEY IN2 PIN 41	FM MODE	MEMORY	AUTO/MANU	F/P
KEY IN3 PIN 42	TAPE MONITOR	AUX/TV	FM/AM	CD
KEY IN4 PIN 43	——	PTY SELECT	SEARCH	DISPLAY

6. ALIGNMENT PROCEDURES

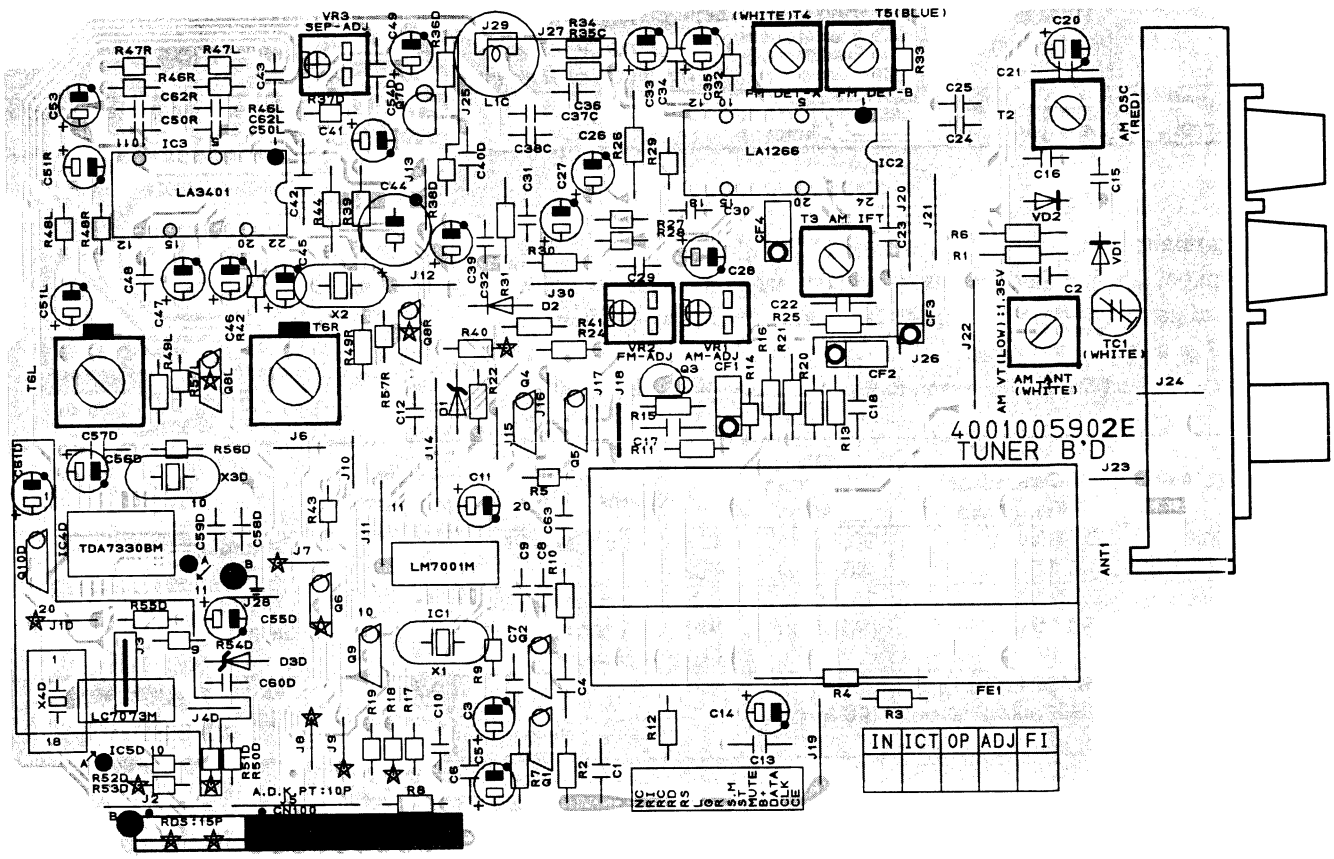
TUNER

1. Equipment Reuired

- AM Standard Signal Generator (AM SSG)
- Oscilloscope
- AC Voltmeter
- FM Standard Signal Generator (FM SSG)
- Stereo Modulator
- Audio Generator
- Distortion Meter
- DC Voltmeter
- Frequency Counter

Note : Disconnect external FM antenna prior to alignment

2. Alignment and Test Point



3. AM Alignment

- Output of signal generator should not be greater than necessary to obtain an optimum output reading.
- Signal generator modulation : 30%
- RF Signal frequency : 400 Hz
- Switch : Press the BAND button to AM

Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipement Connection	Adjustment Point	Adjust for
1	Tuning Voltage	520 kHz (522 kHz)	520 kHz 1) (522 kHz)	DC Volt meter to J22 (TP1)	T2 AM OSC (R)	DC 1.3V
2	RF5 Tuning	600 kHz (594 kHz)	600 kHz 1) (594 kHz)	AC voltmeter and oscilloscope to	T1 MW ANT (W)	Maximize audio output
		1400 kHz (1404 kHz)	1400 kHz 2) (1404 kHz)	speaker terminal of L or R channel	TC1	
		* Feed signal should be fed to loop antenna through the test loop antenna 60 cm distant from the appliance. * Repeat the step 1) and 2) until no further improvement occurs.				
3	IF	1000 kHz (999 kHz)	1000 kHz (999 kHz)	AC voltmeter and oscilloscope to speaker terminal of L or R channel	T3 AM IFT	Maximize audio output
4	Tuned Level	1000 kHz (999 kHz) 800 μV/m	1000 kHz (999 kHz)		VR1	"Tuned" flag in the FL display light on

4. FM Alignment

- Output of signal generator should not be greater than necessary to obtain an optimum output reading.
- Signal generator deviation : USA/Canada/Korea : 75kHz, Europe : 40kHz
- RF Signal frequency : 1kHz
- Switch : Press the BAND button to FM and MODE button to MONO.

Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipement Connection	Adjustment Point	Adjust for
1	Tuning Band Width	98.1 MHz (98 MHz)	98.1MHz (98 MHz)	DC Volt meter to R26 (PCB1)	T4	Zero reading on DC Volt meter
2	THD	98.1 MHz (98 MHz)	98.1MHz (98 MHz)	Distortion meter to TAPE OUT jack of L or R channel	T5	Minimize distortion
3	Tuned Level	98.1MHz (98.1MHz) SSG output level : 10 μV/m	98.1MHz (98 MHz)		VR2	"Tuned" flag in the FL display light on

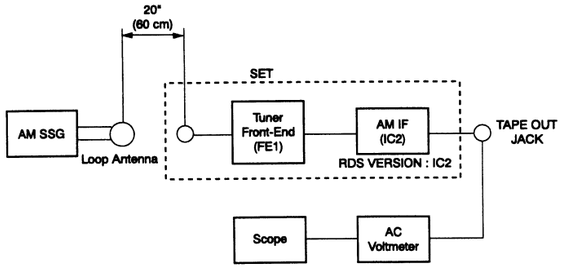
5. MPX Alignment

- Signal generator frequency : 98 MHz
- Signal generator deviation : USA : 75 kHz, Europe : 40 kHz
- RF Signal frequency : 1kHz
- Signal generator outut level : 1000 μV/m
- Connect signal generator to FM antenna terminal through FM dummy antenna (75 Ω)
- Switch : Press the BAND button to FM and the FM MODE button to STEREO

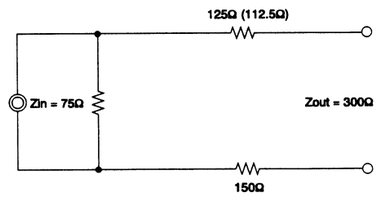
Step	Subject	Signal Generator Frequency	Set Frequency Setting	Equipement Connection	Adjustment Point	Adjust for
1	Seperation R → L	8% Modulation	Pilot on	AC voltmeter to speaker terminal of R channel	VR3	Set AC voltmeter to 0 dB
				AC voltmeter to speaker terminal of L channel		AC voltmeter reading should be at least 40 dB below
2	Seperation L → R	8% Modulation	Pilot on	AC voltmeter to speaker terminal of L channel	VR3	Set AC voltmeter to 0 dB
				AC voltmeter to speaker terminal of R channel		AC voltmeter reading should be at least 40 dB below
If you could not obtain –40dB readings in steps 1 and 2, readjust VR3 until you obtain –40dB readings. Norminal is –45dB.						

6. Equipment Connection

6-1. AM Alignment Connection

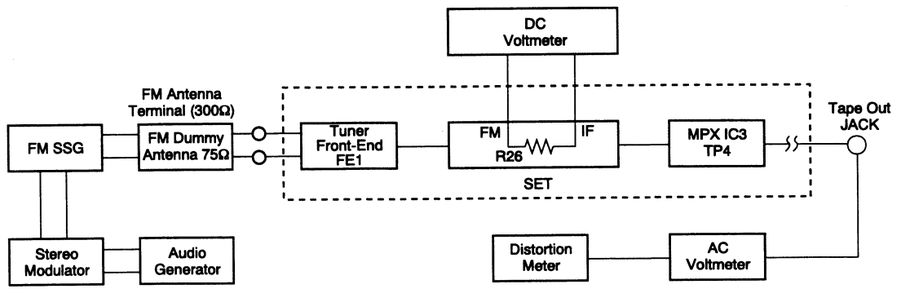


6-2. FM Dummy Antenna

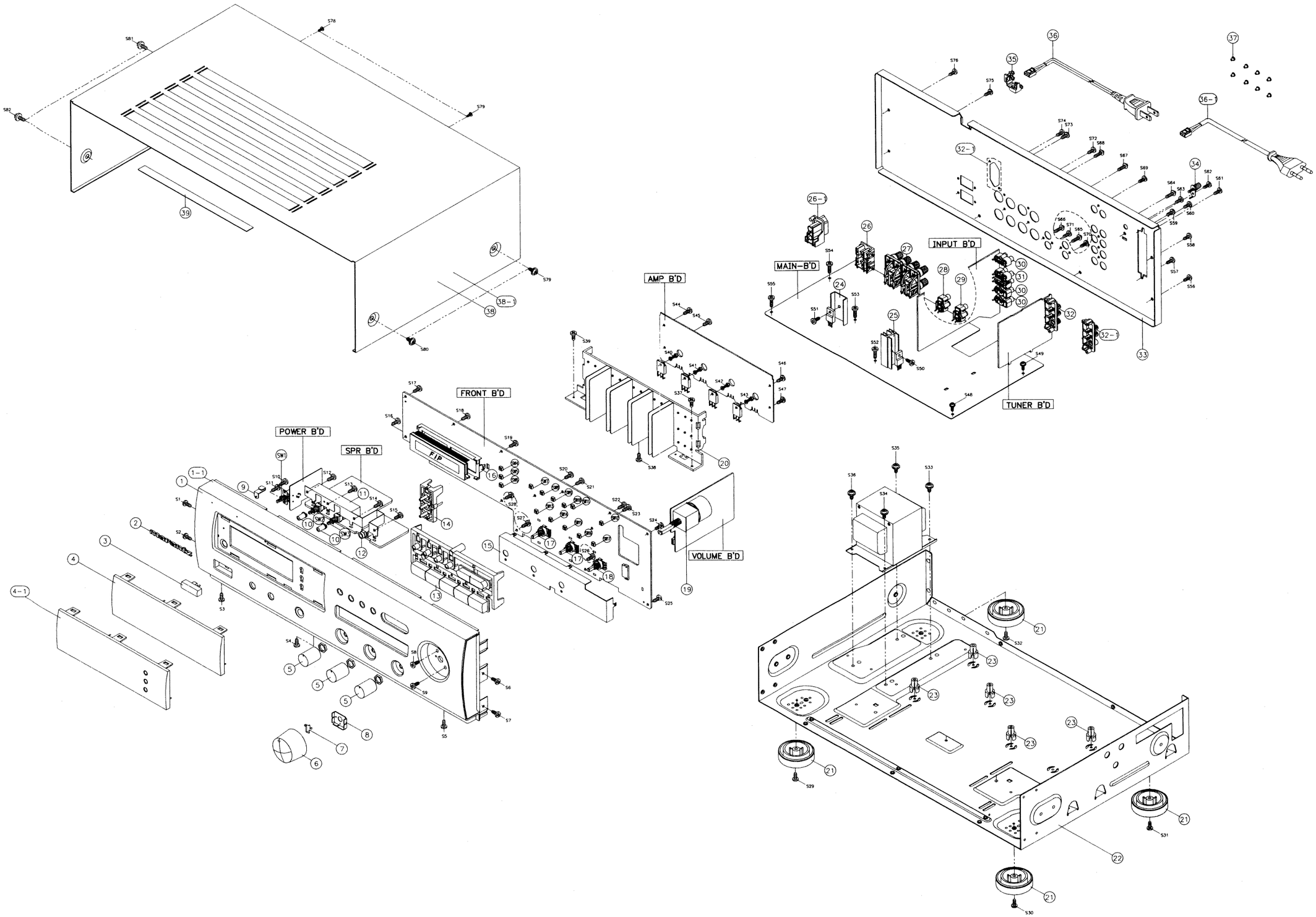


FM Dummy Antenna to 300Ω Antenna terminal of system.

6-3. FM RF/IF and MPX Alignment Connection



7. EXPLODED VIEWS AND PARTS LIST



(VERS. : VERSION, U: USA, F: Japan, K: Far East, /XX: Europe)

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
1	SR38/02B	4822 459 05212	PANEL FRONT BLACK	245W248010
1	SR48U	nsp	PANEL FRONT BLACK	236W248010
1	SR48/02B	4822 459 05213	PANEL FRONT BLACK	236W248020
2		nsp	BADGE (MARANTZ)	168W251010
3		4822 410 11217	BTN POWER BLACK	168W270090
4	SR48U	nsp	WINDOW DISPLAY SMOKED	236W158010
4	SR38/02B SR48/02B	4822 450 10607	WINDOW DISPLAY SMOKED	236W158020
5		4822 410 11054	KNOB ROTARY BLACK	192W154020
6		4822 410 12223	KNOB MAIN BLACK	236W154010
7		4822 381 12056	INDICATOR VR	236W355010
8		nsp	BRACKET VOLUME	nsp
9		nsp	INDICATOR STANDBY	nsp
10		nsp	BTN SPEAKER BLACK	nsp
11		nsp	BKT JACK PHONE T=0.5	nsp
12		4822 267 31992	JACK PHONE	*YT000830R
13		4822 410 12224	BTN 11KEY BLACK	236W270010
14	SR38/02B SR48/02B	4822 410 12225	BTN 3KEY BLACK	236W270020
15		nsp	SHIELD FENCE T=0.3	nsp
16		nsp	HOLDER FL BLACK	nsp
17		4822 101 11754	VR TREBLE/BASS	*RM000240R
18		4822 101 11755	VR BALANCE	*RM000250R
20		nsp	HEAT SINK POWER	nsp
21		4822 462 10695	FOOT (H/S)	168W057010
22		nsp	CH MAIN	nsp
23		nsp	KNOB SPACE BLACK	nsp
24		nsp	HEAT SINK REG TR	nsp
25		nsp	HEAT SINK REG TR	nsp
⚠ 26	SR48U	nsp	AC OUTLET	*YT000910R
⚠ 26	SR38/02B SR48/02B	4822 267 31994	AC OUTLET	*YT000920R
28		4822 265 10928	RCA 2P PREOUT	*YT001050R
29		4822 267 31993	RCA 2P ORANGE	*YT000850R
30		4822 265 11554	RCA 2P	*YT001420R
31		4822 265 11477	RCA 4P	*YT001340R
32	SR48U	nsp	ANT TERMINAL	*YT001350R
32	SR38/02B SR48/02B	4822 265 11478	ANT TERMINAL	*YT001360R
33	SR38/02B	nsp	CH BACK	nsp
33	SR48U	nsp	CH BACK	nsp
33	SR48/02B	nsp	CH BACK	nsp
34		4822 265 10933	TERMINAL	*YT001020R
35		nsp	CORD STOPPER	nsp
⚠ 36	SR48U	nsp	CORD AC POWER	nsp
⚠ 36	SR38/02B SR48/02B	nsp	CORD AC POWER	nsp
37	SR38/02B SR48/02B	nsp	BUSHING	nsp
38	SR38/02B SR48U	nsp	COVER TOP	nsp
38	SR48/02B	nsp	COVER TOP	nsp
39		nsp	BUFFER	nsp
⚠ TR01	SR38/02B	4822 146 11107	MAINS TRANSFORMER 230V	*TS000890R
⚠ TR01	SR48U	nsp	MAINS TRANSFORMER 120V	*TS000810R
⚠ TR01	SR48/02B	4822 146 11108	MAINS TRANSFORMER 230V	*TS000820R
001T	SR48U	nsp	USER GUIDE (DFU)	236W851250
001T	SR38/02B SR48/02B	4822 736 16668	USER GUIDE (DFU)	236W851310
Z001	SR38/02B	4822 219 10067	REMOTE COMMANDER RC66PM	ZK432W0010
Z001	SR48/02B SR48U	4822 219 10644	REMOTE COMMANDER RC480SR	ZK237W0010
			SCREW	
S1-S32		nsp	SCREW #B BTT 3X8B	nsp
S37-S39		nsp	SCREW #B BTT 3X9B	nsp
S50-S51		nsp	SCREW #B BTT 3X10B	nsp
S56-S63		nsp	SCREW #B BTT 3X11B	nsp
S69-S78		nsp	SCREW #B BTT 3X12B	nsp
S33-S36		nsp	SCREW BSAM 4X8B	nsp
S79-S82		nsp	SCREW BSAM 4X8B	nsp
S40-S43		nsp	SCREW HEAT SINK	nsp
S44-S49		nsp	SCREW #2 WPTT 3X6Y	nsp
S52-S55		nsp	SCREW #2 BTC 3X18Y	nsp
S64-S68		nsp	SCREW G.N.D	nsp

NOTE: nsp = PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

8. ELECTRICAL PARTS LIST

ASSIGNMENT OF COMMON PARTS CODES.

RESISTORS

R***: 1) GD05 x x x 140, Carbon film fixed resistor, ±5% 1/4W
R***: 2) GD05 x x x 160, Carbon film fixed resistor, ±5% 1/6W
① Resistance value

Examples ;
① Resistance value

0.1Ω 001	10Ω 100	1kΩ 102	100kΩ 104
0.5Ω 005	18Ω 180	2.7kΩ 272	680kΩ 684
1Ω 010	100Ω 101	10kΩ 103	1MΩ 105
6.8Ω 068	390Ω 391	22kΩ 223	4.7MΩ 475

Note : Please distinguish 1/4W from 1/6W by the shape of parts used actually.

CAPACITORS

C***: CERAMIC CAP.
3) DD1 x x x x 370, Ceramic capacitor, Disc type, Temp.coeff. P350~N1000, 50V
② Tolerance
③ Capacity value

Examples ;
② Tolerance (Capacity deviation)
± 0.25 pF 0
± 0.5 pF 1
± 5 % 5
* Tolerance of COMMON PARTS handled here are as follows :
0.5 pF – 5 pF ..... ± 0.25 pF
6 pF – 10 pF ..... ± 0.5 pF
12 pF – 560 pF ..... ± 5 %
③ Capacity value

0.5 pF 005	3 pF 030	100 pF 101
1 pF 010	10 pF 100	220 pF 221
1.5 pF 015	47 pF 470	560 pF 561

C***: CERAMIC CAP.
4) DK16 x x x 300, High dielectric constant ceramic capacitor, Disc type, Temp.chara. 2B4, 50V
④ Capacity value

Examples ;
④ Capacity value

100 pF 101	1000 pF 102	10000 pF 103
470 pF 471	2200 pF 222	

C***: 5) ELECTROLY CAP. (⏚), 6) FILM CAP. (⏤)
5) EA x x x x x x 10, Electrolytic capacitor, One-way lead type, Tolerance ±20%
⑥ Working voltage
⑤ Capacity value

Examples ;
⑤ Capacity value

0.1 µF 104	4.7 µF 475	100 µF 107
0.33 µF 334	10 µF 106	330 µF 337
1 µF 105	22 µF 226	1100 µF 118
		2200 µF 228

⑥ Working voltage

6.3 V 006	25 V 025
10 V 010	35 V 035
16 V 016	50 V 050

6) DF15 x x x 350 → Plastic film capacitor, One-way type, Mylar ±5% 50V
DF15 x x x 310
DF16 x x x 310 → Plastic film capacitor, One-way type, Mylar ±10% 50V
⑦ Capacity value

Examples ;
⑦ Capacity value

0.001 µF(1000pF) 102	0.1 µF 104
0.0018 µF 182	0.56 µF 564
0.01 µF 103	1 µF 105
0.015 µF 153	

NOTE : 1) The above CODES (R***, R***, C***, C*** and C***) are omitted on the schematic diagram in some case.
2) On the occasion, be confirmed the common parts on the parts list.
3) Refer to "Common Parts List" for the other common parts **(RI05, DD4, DK4)**.

NOTE ON SAFETY FOR FUSIBLE RESISTOR :

The suppliers and their type numbers of fusible resistors are as follows ;
1. KOA Corporation

Part No.(MJI)	Type No.(KOA)	Description
NH05 x x x 140	RF25S x x x x ΩJ	(±5% 1/4W)
NH05 x x x 120	RF50S x x x x ΩJ	(±5% 1/2W)
NH85 x x x 110	RF73B2A x x x x ΩJ	(±5% 1/10W)
NH95 x x x 140	RF73B2E x x x x ΩJ	(±5% 1/4W)

* Resistance value
* Resistance value (0.1 – 10kΩ)

2. Matsushita Electronic Components Co., Ltd

Part No.(MJI)	Type No.(MEC)	Description
NF05 x x x 140	ERD-2FCJ x x x	(±5% 1/4W)
RF05 x x x 140		
NF02 x x x 140	ERD-2FCG x x x	(±2% 1/4W)
RF02 x x x 140		

* Resistance value
* Resistance value

Examples ;
* Resistance value

0.1Ω 001	10Ω 100	1kΩ 102	100kΩ 104
0.5Ω 005	18Ω 180	2.7kΩ 272	680kΩ 684
1Ω 010	100Ω 101	10kΩ 103	1MΩ 105
6.8Ω 068	390Ω 391	22kΩ 223	4.7MΩ 475

ABBREVIATION AND MARKS			
ANT.	: ANTENNA	BATT.	: BATTERY
CAP.	: CAPACITOR	CER.	: CERAMIC
CONN.	: CONNECTING	DIG.	: DIGITAL
HP	: HEADPHONE	MIC.	: MICROPHONE
µ-PRO	: MICROPROCESSOR	REC.	: RECORDING
RES.	: RESISTOR	SPK	: SPEAKER
SW	: SWITCH	TRANSF.	: TRANSFORMER
TRIM.	: TRIMMING	TRS.	: TRANSISTOR
VAR.	: VARIABLE	X'TAL	: CRYSTAL

NOTE ON SAFETY:

Symbol ⚠ Fire or electrical shock hazard. Only original parts should be used to replaced any part marked with symbol ⚠ . Any other component substitution (other than original type), may increase risk of fire or electrical shock hazard.

(VERS. : VERSION, U: USA, F: Japan, K: Far East, /XX: Europe)

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
			PCB1 ASSEMBLY P.C.BOARD AMP	
			CAPACITORS	
C200C/S		nsp	4.7uF 50V M	nsp
C201C/S		nsp	470pF 50V J	nsp
C202C/S		nsp	0.0022uF 50V J	nsp
C203C/S		nsp	27pF 50V J	nsp
C204C/S		nsp	47uF 16V M	nsp
C206C/S		nsp	18PpF 50V J	nsp
C207C/S		nsp	220pF 50V J	nsp
C208C/S		nsp	0.047uF 50V J	nsp
C209C/S		nsp	10uF 35V M	nsp
C211		nsp	100uF 25V M	nsp
C212		nsp	470uF 6.3V M	nsp
C213		nsp	10uF 50V M	nsp
C214C/S		nsp	15pF 50V J	nsp
C215		nsp	1uF 100V M	nsp
C216C/S		nsp	10uF 50V M	nsp
C217	SR38/02B SR48/02B	nsp	0.22uF 63V J	nsp
C218		nsp	1uF 100V M	nsp
C219	SR38/02B SR48/02B	nsp	0.22uF 63V J	nsp
C221		nsp	4.7uF 50V M	nsp
			CONNECTORS	
CNT204		nsp	CNT WAFER 2.5mm 2P	nsp
CNT407		nsp	CNT WAFER 2.5mm 3P	nsp
CNT408		nsp	CNT WAFER 2.5mm 8P	nsp
CNT416		nsp	CNT WAFER 2.5mm 4P	nsp
			DIODES	
D200C/S		4822 130 30621	1N4148	QP13030621
D201C/S		4822 130 30621	1N4148	QP13030621
D202C/S		4822 130 30621	1N4148	QP13030621
D203		4822 130 10624	Zener MTZJ27B-0.5W	*HD301580R
D203		4822 130 70048	Zener UZ27BSB	*HD301120R
D205/206		4822 130 30621	1N4148	QP13030621
D207		4822 130 10879	Zener UZ7.5BSB	*HD301330R
			COILS	
L200C/S		4822 157 71892	0.5UH	*LC106490R
			TRANSISTORS	
Q200C/S		4822 130 43233	KTC3200/KTC2240BL NPN	HT322402A1
Q201C/S		4822 130 43233	KTC3200/KTC2240BL NPN	HT322402A1
Q202C/S		4822 130 42431	2SC1740S NPN	HT317402F0
Q203C/S		4822 130 42431	2SC1740S NPN	HT317402F0
Q204C/S		4822 130 43012	KTA1024 Y PNP	HT112082A0
Q205C/S		4822 130 42431	2SC1740S NPN	HT317402F0
Q206C/S		4822 130 43225	KTC3206 Y NPN	HT322292A0
Q208C/S		4822 130 63898	KSC2690 NPN	*HT300400R
Q209C/S		4822 130 63897	KSA1220 PNP	*HT100230R
Q210C/S		4822 130 63895	2SC3854 NPN	*HT300420R
Q210C/S		4822 130 63902	2SC3853 NPN	*HT300430R
Q211C/S		4822 130 63894	2SA1490 PNP	*HT100240R
Q211C/S		4822 130 63901	2SA1489 PNP	*HT100250R
Q212C/S		4822 130 42431	2SC1740S NPN	HT317402F0
Q213		4822 130 42715	KTA1015Y/BKTA1266 PNP	HT10001000
Q214/215		4822 130 42431	2SC1740S NPN	HT317402F0
			RESISTORS	
J258		nsp	3R3 ohm 1/5W J	nsp
J267		nsp	3R3 ohm 1/5W J	nsp
J269		nsp	3R3 ohm 1/5W J	nsp
J282		nsp	3R3 ohm 1/5W J	nsp
R200C/S		nsp	47k ohm 1/5W J	nsp
R201C/S		nsp	100 ohm 1/5W J	nsp
R202C/S		nsp	3.3k ohm 1/5W J	nsp
R203C/S		nsp	3.3k ohm 1/5W J	nsp
R204/205		nsp	4.7k ohm 1/5W J	nsp
R206C/S		nsp	560 ohm 1/5W J	nsp
R208C/S		nsp	47k ohm 1/5W J	nsp
R209C/S		nsp	2.7k ohm 1/5W J	nsp
R210C/S		nsp	5.1k ohm 1/5W J	nsp
R211C/S		nsp	560 ohm 1/5W J	nsp
R212C/S		nsp	100 ohm 1/5W J	nsp
R213C/S		nsp	680 ohm 1/5W J	nsp
R214C/S		nsp	1.8k ohm 1/5W J	nsp
R215C/S		nsp	1k ohm 1/5W J	nsp
R216C/S		nsp	47k ohm 1/5W J	nsp
R217C/S		nsp	560 ohm 1/5W J	nsp
R218C/S		nsp	100 ohm 1/5W J	nsp
R219C/S		nsp	220 ohm 1/5W J	nsp
R220C/S		nsp	390 ohm 1/5W J	nsp
R221C/S		nsp	4.7k ohm 1/5W J	nsp
R222C/S		nsp	15k ohm 1/5W J	nsp
R223C/S		nsp	22 ohm 1/5W J	nsp
R224C/S		nsp	22 ohm 1/5W J	nsp
R225C/S		nsp	27k ohm 1/5W J	nsp
R229		nsp	10k ohm 1/5W J	nsp
R230		nsp	47k ohm 1/5W J	nsp
R231		nsp	1k ohm 1/5W J	nsp
R232		nsp	1.5k ohm 1/5W J	nsp
R233		nsp	47k ohm 1/5W J	nsp
R234		nsp	100k ohm 1/5W J	nsp
R235		nsp	6.8k ohm 1/5W J	nsp
R236		nsp	3.3k ohm 1/5W J	nsp
R237C/S		nsp	1k ohm 1/5W J	nsp
R238		nsp	10k ohm 1/5W J	nsp
⚠ R240C/S		4822 117 13558	0.27 ohm 5W J	*G0000001R
R241		nsp	1k ohm 1/5W J	nsp
R241C/S		4822 117 13557	3k ohm	*HH000080R
			PCB2 ASSEMBLY P.C.BOARD MAIN	
			CAPACITORS	
C103		nsp	0.01uF 400V J	nsp
⚠ C104/105		4822 124 12388	3300uF 50V M	*EA000800R
⚠ C104/105		4822 126 12866	4700uF 50V M	EB47805040
C106L/R		nsp	100PpF 50V J	nsp
C109		nsp	0.047uF 100V J	nsp
C110/111		5322 124 22229	1000uF 35V M	EA10803510
C112/113		nsp	1uF 50V M	nsp
C114		nsp	47uF 50V M	nsp
C115/116		nsp	0.047uF 100V J	nsp
C117		nsp	220uF 35V M	nsp
C118		nsp	1uF 50V M	nsp
C119		nsp	22uF 16V M	nsp
⚠ C121		nsp	0.0047uF 400V J	nsp
C122A/B		nsp	3300pF 16V J	nsp
C125A/B		nsp	3300pF 16V J	nsp
			CONNECTORS	
CN101		nsp	CNT WAFER 7.92mm 2P	nsp
CP100	SR48U	nsp	CNT WAFER 2.5mm 10P	nsp
CP100	SR38/02B SR48/02B	nsp	CNT WAFER 2.5mm 15P	nsp
CP102		nsp	CNT WAFER INTERFACE AC S-2 2P	nsp
CP104		nsp	CNT WAFER 2.5mm 4P	nsp
CP105		nsp	CNT WAFER 3.96mm3P	nsp
CP106		nsp	CNT WAFER 2.5mm 3P	nsp
CP111	SR48U	nsp	CNT WAFER 3.96mm AC GSCS-1301	nsp
CP111	SR38/02B SR48/02B	nsp	CNT WAFER 3.96mm AC	nsp
CN201		nsp	CNT WIRE 3P	nsp
CN200		nsp	CNT WIRE 8P	nsp
CP202		nsp	CNT WIRE 4P	nsp
CP601		nsp	CNT WAFER 2.0mm 8P	nsp
CP602		nsp	CNT WAFER 2.0mm 5P	nsp
CP301		nsp	CNT FPC 1.25mm 15P	nsp
CP302		nsp	CNT WAFER 2.5mm 7P	nsp
CP303		nsp	CNT WAFER 2.0mm 4P	nsp
CP704		nsp	CNT WAFER 3.96mm 8P	nsp
			DIODES	
⚠ D101		4822 130 11491	RECTIFIER BRIDGE D5SBA60	*HE200180R
⚠ D102-106		4822 130 31878	DIODE RECTIFIER 1N4003 (HK)	HD200010AR
D107		4822 130 70046	Zener UZ9.1BSB	*HD301100R
D108/109		4822 130 83228	Zener UZ15BSB	*HD301110R
D110		4822 130 82703	Zener UZ5.1BSB	*HD301080R
D111-115		4822 130 31878	DIODE RECTIFIER 1N4003 (HK)	HD200010AR
D116		4822 130 30621	1N4148	QP13030621
D117		4822 130 83228	Zener UZ15BSB	*HD301110R
⚠ D118		4822 130 31878	DIODE RECTIFIER 1N4003 (HK)	HD200010AR
			FUSE	
⚠ F101	SR48U	nsp	NB 3.5A/125V	*FS000420R
⚠ F101	SR38/02B SR48/02B	4822 252 11232	TL 2.5A/250V	*FS000360R
F102	SR48U	nsp	Jumper	nsp
⚠ F102	SR38/02B SR48/02B	4822 070 31002	TL 1A/250V	*FS000280R
⚠ F103	SR48U	nsp	NB 250mA/125V	*FS000430R
⚠ F103	SR38/02B SR48/02B	4822 252 11359	TL 160mA/250V	*FS000450R
⚠ F104	SR48U	nsp	NB 750mA/125V	*FS000440R

NOTE: nsp = nsp = PART IS LISTED FOR REFERENCE ONLY, MARANTZ WILL NOT SUPPLY THESE PARTS.

(VERS. : VERSION, U: USA, F: Japan, K: Far East, /XX: Europe)

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
⚠ F105	SR48U	nsp	NB 750mA/125V	*FS000440R
⚠ F104	SR38/02B SR48/02B	4822 252 11361	TL 630mA/250V	*FS000460R
⚠ F105	SR38/02B SR48/02B	4822 252 11361	TL 630mA/250V	*FS000460R
			INTEGRATED CIRCUITS	
⚠ IC101		4822 209 90086	KIA7805	*HC300140R
⚠ IC102		4822 209 91033	KIA7815	*HC300150R
			TRANSISTORS	
Q101/102		4822 130 62503	DTC114YS NPN	*BA000210R
Q103/104		4822 130 61723	DTC323TS NPN	BA20028210
Q105		4822 130 43225	KTC3206 NPN	HT322292A0
Q106		4822 130 42431	2SC1740S NPN	HT317402F0
Q107		4822 130 62787	DTA114YS PNP	*BA000190R
			RESISTORS	
⚠ R101		4822 053 10332	3.3k ohm 1W J	GA05332010
R102	SR38	nsp	7.5k ohm 1/5W J	nsp
R102	SR48	nsp	8.2k ohm 1/5W J	nsp
⚠ R103L/R		4822 052 10471	470 ohm 1/5W J	GG05471160
⚠ R104		4822 053 11478	4.7 ohm 2W J	GA05047020
R105/106		nsp	68k ohm 1/5W J	nsp
R107		nsp	100k ohm 1/5W J	nsp
R108		nsp	4.7k ohm 1/5W J	nsp
R109		nsp	100 ohm 1/5W J	nsp
R111		nsp	15k ohm 1/5W J	nsp
R112		nsp	5.6k ohm 1/5W J	nsp
⚠ R113/114		4822 053 10109	10 ohm 1W J	GA05100010
R115		nsp	2.2k ohm 1/5W J	nsp
⚠ R116	SR48U	nsp	3300k ohm 1/2W J	RC05471010
R117/118		nsp	1k ohm 1/5W J	nsp
R119		nsp	22k ohm 1/5W J	nsp
⚠ R120		4822 053 10271	270 ohm 1W J	GA05271010
			MISCELLANEOUS	
⚠ RLY101		4822 280 80794	RELAY CR-7DC12V	*LY000120R
⚠ T101	SR48U	nsp	STBY TRANSFORMER(120V)	*TS000790R
⚠ T101	SR38/02B SR48/02B	4822 146 11109	STBY TRANSFORMER(230V)	*TS000800R
SP101	SR38/02B	4822 290 81739	SPEAKER TERMINAL (8P)	*YT000790R
SP101	SR48	4822 265 11543	SPEAKER TERMINAL (8P)	*YT001210R
			PCB3 ASSEMBLY P.C.BOARD SPKR SEL CAPACITORS	
C401L/R		nsp	0.047uF 100V M	nsp
C402L/R		nsp	560pF 50V J	nsp
			RESISTORS	
⚠ R401L/R		4822 053 10109	10 ohm 1W J	GA05100010
⚠ R402L/R		4822 053 11221	470 ohm 2W J	GA05221020
R403L/R		nsp	15K ohm 1/5W J	nsp
SW401		4822 276 13656	SPEAKER-A	*SP000630R
SW402		4822 276 13656	SPEAKER-B	*SP000630R
			CONNECTORS	
CN704		nsp	CNT WIRE 3.96mm 8P	nsp
			PCB4 ASSEMBLY P.C.BOARD VOLUME CAPASITORS	
C701		nsp	47uF 16V M	nsp
C702		nsp	100uF 10V M	nsp
C703		nsp	100uF 16V M	nsp
C704		nsp	100uF 10V M	nsp
			CONNECTORS	
CN701		nsp	CNT WAFER 2.5mm BTB TKC-V10P-A1	nsp
CP701		nsp	CNT WAFER 2.0mm 7P	nsp
			INTEGRATED CIRCUITS	
IC701		4822 209 30619	TA7291S	*HC103890R
			TRANSISTORS	
Q701		4822 130 62503	DTC114YS	*BA000210R
			RESISTORS	
VR701		4822 101 11941	VR MAIN 50K ohm	*RY000020R
R701		nsp	1.2k ohm 1/5W J	nsp
R702		nsp	33 ohm 1/5W J	nsp

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R703		nsp	15k ohm 1/5W J	nsp
R704		nsp	4.7k ohm 1/5W J	nsp
			PCB5 ASSEMBLY P.C.BOARD INPUT CAPACITORS	
C601LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C602L/R		nsp	100pF 50V J	nsp
C603L/R		nsp	4.7uF 50V M	nsp
C604LF/RF	SR38/02B SR48/02B	nsp	0.0022pF 16V J	nsp
C605L/R		nsp	0.0018uF 100V J	nsp
C606L/R		nsp	0.0056uF 100V J	nsp
C607L/R		nsp	33uF 25V M	nsp
C608L/R		nsp	1uF 50V M	nsp
C609L/R		nsp	0.0018uF 100V J	nsp
C610/611		nsp	47uF 16V M	nsp
C614LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C615LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C616LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C617LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C620LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C621LF/RF	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C622LF/RF	SR38/02B SR48/02B	nsp	47pF 50V J	nsp
C623/624		nsp	47uF 16V M	nsp
C625-627		nsp	100pF 50V J	nsp
C633L/R		nsp	4.7uF 16V M	nsp
C634L/R		nsp	4.7uF 16V M	nsp
C637/638		nsp	47uF 16V M	nsp
			CONNECTORS	
CP601		nsp	CNT HOUSING 2.0mm 5P	nsp
CP602		nsp	CNT HOUSING 2.0mm 8P	nsp
			INTEGRATED CIRCUITS	
IC601		4822 209 17339	KIA6259	*HC104270R
IC602		4822 209 17341	TC9273-007	*HC104280R
IC603		4822 209 91029	KIA4559	*HC103590R
L601LF/RF	SR38/02B SR48/02B	nsp	47 uH	nsp
L601LF/RF	SR48U	nsp	47 uH	nsp
			RESISTORS	
R601L/R		nsp	1k ohm 1/5W J	nsp
R602L/R		nsp	91k ohm 1/5W J	nsp
R603L/R		nsp	91k ohm 1/5W J	nsp
R604L/R		nsp	560k ohm 1/5W J	nsp
R605L/R		nsp	43k ohm 1/5W J	nsp
R606L/R		nsp	820 ohm 1/5W J	nsp
R607L/R		nsp	560 ohm 1/5W J	nsp
R608L/R		nsp	100k ohm 1/5W J	nsp
R611L/R		nsp	1k ohm 1/5W J	nsp
R612L/R		nsp	1k ohm 1/5W J	nsp
R614L/R		nsp	1k ohm 1/5W J	nsp
R615L/R		nsp	1k ohm 1/5W J	nsp
R616/617		nsp	220 ohm 1/5W J	nsp
R618/619		nsp	680 ohm 1/5W J	nsp
R620		nsp	1k ohm 1/5W J	nsp
R622L/R		nsp	100k ohm 1/5W J	nsp
⚠ R623L/R		4822 052 10471	470 ohm 1/5W J	GG05471160
R624L/R		nsp	100k ohm 1/5W J	nsp
R625L/R		nsp	100k ohm 1/5W J	nsp
R626/627		nsp	220 ohm 1/5W J	nsp
			PCB6 ASSEMBLY P.C.BOARD TUNER CAPACITORS	
C1		nsp	22000pF 25V Z	nsp
C2		nsp	0.047uF 50V J	nsp
C3		nsp	3.3uF 50V M	nsp
C4		nsp	10000pF 16V Z	nsp
C5		nsp	47uF 16V M	nsp
C6		nsp	22000pF 25V Z	nsp
C7		nsp	10000pF 16V Z	nsp
C8/9		nsp	18pF 50V J	nsp

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(VERS. : VERSION, U: USA, F: Japan, K: Far East, /XX: Europe)

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C10		nsp	100pF 50V J	nsp
C11		nsp	47uF 16V M	nsp
C12		nsp	22000pF 50V Z	nsp
C13		nsp	22000pF 25V Z	nsp
C14		nsp	100uF 16V M	nsp
C15		nsp	470pF 50V J	nsp
C16		nsp	15pF 50V J	nsp
C17/18		nsp	22000pF 25V Z	nsp
C20		nsp	10uF 35V M	nsp
C21/22		nsp	22000pF 25V Z	nsp
C23		nsp	10000pF 16V Z	nsp
C24/25		nsp	22000pF 50V Z	nsp
C26		nsp	4.7uF 50V M	nsp
C27		nsp	3.3uF 50V M	nsp
C28		nsp	4.7uF 50V M	nsp
C29		nsp	22000pF 50V Z	nsp
C30		nsp	0.022uF 100V J	nsp
C31		nsp	0.0033uF 100V J	nsp
C32		nsp	0.039uF 100V J	nsp
C33		nsp	1uF 50V M	nsp
C34		nsp	22000pF 25V Z	nsp
C35		nsp	100uF 16V M	nsp
C36		nsp	330pF 50V J	nsp
C37C	SR38/02B SR48/02B	nsp	82pF 50V J	nsp
C38C	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C39		nsp	10uF 35V M	nsp
C40D	SR38/02B SR48/02B	nsp	22000pF 25V Z	nsp
C41		nsp	4.7uF 50V M	nsp
C42		nsp	47000pF 50V Z	nsp
C43		nsp	680pF 50V J	nsp
C44		nsp	100uF 16V M	nsp
C45		nsp	1uF 50V M	nsp
C46		nsp	0.22uF 50V M	nsp
C47		nsp	1uF 50V M	nsp
C48		nsp	22000pF 50V Z	nsp
C49		nsp	10uF 35V M	nsp
C50L/R	SR48U	nsp	560pF 50V J	nsp
	SR38/02B SR48/02B	nsp	220pF 50V J	nsp
C51L/R		nsp	10uF 35V M	nsp
C53		nsp	10uF 35V M	nsp
C54D	SR38/02B SR48/02B	nsp	270pF 50V J	nsp
C55D	SR38/02B SR48/02B	nsp	47uF 16V M	nsp
C56D	SR38/02B SR48/02B	nsp	10uF 35V M	nsp
C57D	SR38/02B SR48/02B	nsp	0.1uF 50V Z	nsp
C58D/59D	SR38/02B SR48/02B	nsp	27pF 50V J	nsp
C60D	SR38/02B SR48/02B	nsp	0.1uF 50V J	nsp
C62L/R		nsp	10pF 50V J	nsp
			FILTER	
CF1/CF3	SR48U	nsp	10M7A8 (USA)	*FF100200R
CF1/CF3	SR38/02B SR48/02B	4822 242 82235	10M7S3GH (EUROPE)	*FF100210R
CF4		4822 157 11047	SFM2-450BL	*FF100220R
			DIODES	
D1		4822 130 82703	Zener UZ15BSB	*HD301080R
D2		4822 130 30621	1N4148	QP13030621
D3D		4822 130 82703	Zener UZ15BSB	*HD301080R
VD1/VD2		4822 130 82772	SVC321SPA	HD40006030
			INTEGRATED CIRCUITS	
FE1	SR48U	nsp	FTA4-506H (USA)	*AW000140R
FE1	SR38/02B SR48/02B	4822 210 10843	FTA4-460H (EUROPE)	*AW000150R
IC1		4822 209 17163	LM7001M	*HC104650R
IC2		4822 209 71785	LA1266G	HC10222030
IC3		4822 209 73434	LA3401	*HC104640R
IC4D	SR38/02B SR48/02B	4822 209 33842	TDA7330BD	QP20933842
			COIL	
L1C		nsp	Jumper	nsp

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
L1C	SR38/02B SR48/02B	4822 157 71893	20.8mH	*LC106500R
T1		4822 157 71881	AM-ANT Coil	*TC000150R
T2		4822 157 71888	AM-OSC Coil	*TC000160R
T3		4822 157 71896	AM-IFT Coil	*TC000200R
T4		4822 146 10773	FM-DET-A Coil	*TC000250R
T5		4822 146 10772	FM-DET-B Coil	*TC000260R
T6L/R		4822 157 11049	MPX(19/38k) Coil	*TC000270R
			TRANSISTORS	
Q1/2		4822 130 42431	2SC1740S NPN	HT317402F0
Q3		4822 130 62294	KTC1923Y NPN	HT318091P0
Q4-6		4822 130 62787	KRA107M NPN	*BA000190R
Q7D	SR38/02B SR48/02B	4822 130 42431	2SC1740S NPN	HT317402F0
Q8L/R		4822 130 61723	DTC323TS NPN	BA20028210
Q9		4822 130 62787	KRA107M NPN	*BA000190R
			RESISTORS	
R1		nsp	100k ohm 1/5W J	nsp
R2		nsp	5.6k ohm 1/5W J	nsp
R3		nsp	22k ohm 1/5W J	nsp
R4		nsp	100k ohm 1/5W J	nsp
⚠ R5		4822 052 10471	470 ohm 1/5W J	GG05471160
R6		nsp	100k ohm 1/5W J	nsp
R7		nsp	10k ohm 1/5W J	nsp
R8		nsp	270 ohm 1/5W J	nsp
R9		nsp	560 ohm 1/5W J	nsp
R10		nsp	1k ohm 1/5W J	nsp
R11	SR48U	nsp	180 ohm 1/5W J	nsp
R11	SR38/02B SR48/02B	nsp	100 ohm 1/5W J	nsp
R12		nsp	560 ohm 1/5W J	nsp
R13		nsp	3.3k ohm 1/5W J	nsp
R14		nsp	560 ohm 1/5W J	nsp
⚠ R15		4822 052 10471	470 ohm 1/5W J	GG05471160
R16		nsp	100 ohm 1/5W J	nsp
R17-19		nsp	1k ohm 1/5W J	nsp
R20		nsp	330 ohm 1/5W J	nsp
R21		nsp	270 ohm 1/5W J	nsp
⚠ R22		4822 052 10471	470 ohm 1/5W J	GG05471160
R24		nsp	4.7k ohm 1/5W J	nsp
R25		nsp	68k ohm 1/5W J	nsp
R26	SR48U	nsp	33k ohm 1/5W J	nsp
R26	SR38/02B SR48/02B	nsp	39k ohm 1/5W J	nsp
R27		nsp	10k ohm 1/5W J	nsp
R28		nsp	22k ohm 1/5W J	nsp
R29		nsp	22 ohm 1/5W J	nsp
R30		nsp	4.7k ohm 1/5W J	nsp
R31	SR48U	nsp	10k ohm 1/5W J	nsp
R31	SR38/02B SR48/02B	nsp	2.7k ohm 1/5W J	nsp
R32		nsp	5.6k ohm 1/5W J	nsp
R33		nsp	3.3k ohm 1/5W J	nsp
R34		nsp	100 ohm 1/5W J	nsp
R35C	SR38/02B SR48/02B	nsp	1.8k ohm 1/5W J	nsp
R36D	SR38/02B SR48/02B	nsp	47k ohm 1/5W J	nsp
R37D	SR38/02B SR48/02B	nsp	22 ohm 1/5W J	nsp
R38D	SR38/02B SR48/02B	nsp	1k ohm 1/5W J	nsp
R39		nsp	100 ohm 1/5W J	nsp
R40		nsp	47k ohm 1/5W J	nsp
R41		nsp	22k ohm 1/5W J	nsp
R42		nsp	3.3k ohm 1/5W J	nsp
R43		nsp	22k ohm 1/5W J	nsp
R44		nsp	47k ohm 1/5W J	nsp
R46L/R	SR48U	nsp	120k ohm 1/5W J	nsp
R46L/R	SR38/02B SR48/02B	nsp	220k ohm 1/5W J	nsp
R47L/R	SR48U	nsp	180k ohm 1/5W J	nsp
R47L/R	SR38/02B SR48/02B	nsp	270k ohm 1/5W J	nsp
R48L/R		nsp	2.7k ohm 1/5W J	nsp
R49L/R		nsp	3.3k ohm 1/5W J	nsp
R50D	SR38/02B SR48/02B	nsp	680 ohm 1/5W J	nsp
R52D/53D	SR38/02B SR48/02B	nsp	10k ohm 1/5W J	nsp

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POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R56D	SR38/02B SR48/02B	nsp	2200k ohm 1/5W J	nsp
R57L/R		nsp	1.5k ohm 1/5W J	nsp
			SEMI FIXED VARIABLE RESISTORS	
VR1		4822 101 11855	5K(B)-H	*RA000810R
VR2		4822 100 12294	50K(B)-H	*RA000670R
VR3		4822 101 11757	200K(B)-H	*RA000710R
			MISCELLANEOUS	
TC1		nsp	10pF	nsp
X1		4822 242 10735	X7M2	*JX000390R
X2		4822 242 81117	CS8456F	FQ04563010
X3D		4822 242 10608	X4M332	*JX000400R
			PCB7 ASSEMBLY P.C.BOARD FRONT	
			CAPACITORS	
C301		nsp	4.7uF 50V M	nsp
C302/303		nsp	1000pF 50V J	nsp
C304		4822 124 11552	0.047uF 5.5V	*EX000020R
C305		nsp	100uF 10V M	nsp
C306		nsp	0.1uF 50V Z	nsp
C307/308		nsp	0.0047uF 100V J	nsp
C309L/R		nsp	4.7uF 16V M	nsp
C310L/R		nsp	100pF 50V J	nsp
C311L/R		nsp	47pF 50V J	nsp
C312L/R		nsp	4.7uF 16V M	nsp
C313L/R		nsp	4.7uF 16V M	nsp
C314L/R		nsp	0.018uF 63V J	nsp
C315L/R		nsp	0.082uF 63V J	nsp
C316L/R		nsp	0.0033uF 63V J	nsp
C317L/R		nsp	0.018uF 63V J	nsp
C318/319		nsp	47uF 16V M	nsp
C320-322		nsp	0.1uF 50V Z	nsp
C323		nsp	1uF 50V M	nsp
C324		nsp	0.1uF 50V Z	nsp
C351		nsp	10uF 50V M	nsp
			CONNECTORS	
CN100	SR48U	nsp	CNT WIRE 7.92mm 2P	nsp
CN100	SR38/02B SR48/02B	nsp	CNT WIRE 7.92mm 2P	nsp
CN301		nsp	CNT FPC 1.25mm 15P	nsp
CN302		nsp	CNT WIRE 2.5mm 7P	nsp
CN303		nsp	CNT WIRE 2mm 4P	nsp
CN702		nsp	CNT WAFER 2.5mm SPCKFT BTB TKC-V10X-A1	nsp
			DIODES	
D301-314		4822 130 30621	1N4148	QP13030621
LED301		4822 130 10854	LED SLR-34URCF	*HI100710R
			INTEGRATED CIRCUITS	
IC301		4822 209 17321	CPU uPD78042FGF	*HC104290R
IC302		4822 209 73064	NJM2068	HC10053090
			TRANSISTORS	
Q301		4822 130 42431	2SC1740S NPN	HT317402F0
Q302		4822 130 62503	DTC114YS NPN	*BA000210R
Q303		4822 130 62787	KRA107M PNP	*BA000190R
Q304		4822 130 62503	DTC114YS NPN	*BA000210R
			RESISTORS	
R301		nsp	10k ohm 1/5W J	nsp
R302		nsp	330 ohm 1/5W J	nsp
R303/304		nsp	100k ohm 1/5W J	nsp
R305-308		nsp	47k ohm 1/5W J	nsp
R309-311		nsp	100k ohm 1/5W J	nsp
R312		nsp	220 ohm 1/5W J	nsp
R313-316		nsp	4.7k ohm 1/5W J	nsp
R318L/R		nsp	1k ohm 1/5W J	nsp
R319L/R		nsp	100k ohm 1/5W J	nsp
R320L/R		nsp	1000k ohm 1/5W J	nsp
R321L/R		nsp	47k ohm 1/5W J	nsp
⚠ R322L/R		4822 052 10471	470 ohm 1/5W J	GG05471160
R323		nsp	68k ohm 1/5W J	nsp
R323L/R		nsp	100k ohm 1/5W J	nsp
R324		nsp	68k ohm 1/5W J	nsp
R324L/R		nsp	22k ohm 1/5W J	nsp
R325		nsp	68k ohm 1/5W J	nsp
R325L/R		nsp	3.9k ohm 1/5W J	nsp
R326		nsp	68k ohm 1/5W J	nsp
R326L/R		nsp	2.2k ohm 1/5W J	nsp
R327L/R		nsp	560 ohm 1/5W J	nsp
R328L/R		nsp	1.2k ohm 1/5W J	nsp
R329/330		nsp	220 ohm 1/5W J	nsp
R331		nsp	330 ohm 1/5W J	nsp
R332/333		nsp	100k ohm 1/5W J	nsp
			MISCELLANEOUS	
RMC301		4822 218 12013	CRV1G353-00B 36kHz	*HW100390R
FL101		4822 135 00265	FL Display	*HQ300280R
XTAL301		4822 242 73769	CST4M19	*FQ000110R
SW301	SR38/02B SR48/02B	4822 276 13661	SWITCH TACT	*SP000610R
SW302		4822 276 13661	SWITCH TACT	*SP000610R
SW303		4822 276 13661	SWITCH TACT	*SP000610R
SW304		4822 276 13661	SWITCH TACT	*SP000610R
SW305	SR38/02B SR48/02B	4822 276 13661	SWITCH TACT	*SP000610R
SW306		4822 276 13661	SWITCH TACT	*SP000610R
SW307		4822 276 13661	SWITCH TACT	*SP000610R
SW308		4822 276 13661	SWITCH TACT	*SP000610R
SW309	SR38/02B SR48/02B	4822 276 13661	SWITCH TACT	*SP000610R
SW310		4822 276 13661	SWITCH TACT	*SP000610R
SW311		4822 276 13661	SWITCH TACT	*SP000610R
SW312		4822 276 13661	SWITCH TACT	*SP000610R
SW313		4822 276 13661	SWITCH TACT	*SP000610R
SW314		4822 276 13661	SWITCH TACT	*SP000610R
⚠ SW351		4822 276 14087	SWITCH POWER	*SP000830R

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(VERS. : VERSION, U: USA, F: Japan, K: Far East, /XX: Europe)

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
C10		nsp	100pF 50V J	nsp
C11		nsp	47uF 16V M	nsp
C12		nsp	22000pF 50V Z	nsp
C13		nsp	22000pF 25V Z	nsp
C14		nsp	100uF 16V M	nsp
C15		nsp	470pF 50V J	nsp
C16		nsp	15pF 50V J	nsp
C17/18		nsp	22000pF 25V Z	nsp
C20		nsp	10uF 35V M	nsp
C21/22		nsp	22000pF 25V Z	nsp
C23		nsp	10000pF 16V Z	nsp
C24/25		nsp	22000pF 50V Z	nsp
C26		nsp	4.7uF 50V M	nsp
C27		nsp	3.3uF 50V M	nsp
C28		nsp	4.7uF 50V M	nsp
C29		nsp	22000pF 50V Z	nsp
C30		nsp	0.022uF 100V J	nsp
C31		nsp	0.0033uF 100V J	nsp
C32		nsp	0.039uF 100V J	nsp
C33		nsp	1uF 50V M	nsp
C34		nsp	22000pF 25V Z	nsp
C35		nsp	100uF 16V M	nsp
C36		nsp	330pF 50V J	nsp
C37C	SR38/02B SR48/02B	nsp	82pF 50V J	nsp
C38C	SR38/02B SR48/02B	nsp	100pF 50V J	nsp
C39		nsp	10uF 35V M	nsp
C40D	SR38/02B SR48/02B	nsp	22000pF 25V Z	nsp
C41		nsp	4.7uF 50V M	nsp
C42		nsp	47000pF 50V Z	nsp
C43		nsp	680pF 50V J	nsp
C44		nsp	100uF 16V M	nsp
C45		nsp	1uF 50V M	nsp
C46		nsp	0.22uF 50V M	nsp
C47		nsp	1uF 50V M	nsp
C48		nsp	22000pF 50V Z	nsp
C49		nsp	10uF 35V M	nsp
C50L/R	SR48U	nsp	560pF 50V J	nsp
	SR38/02B SR48/02B	nsp	220pF 50V J	nsp
C51L/R		nsp	10uF 35V M	nsp
C53		nsp	10uF 35V M	nsp
C54D	SR38/02B SR48/02B	nsp	270pF 50V J	nsp
C55D	SR38/02B SR48/02B	nsp	47uF 16V M	nsp
C56D	SR38/02B SR48/02B	nsp	10uF 35V M	nsp
C57D	SR38/02B SR48/02B	nsp	0.1uF 50V Z	nsp
C58D/59D	SR38/02B SR48/02B	nsp	27pF 50V J	nsp
C60D	SR38/02B SR48/02B	nsp	0.1uF 50V J	nsp
C62L/R		nsp	10pF 50V J	nsp
			FILTER	
CF1/CF3	SR48U	nsp	10M7A8 (USA)	*FF100200R
CF1/CF3	SR38/02B SR48/02B	4822 242 82235	10M7S3GH (EUROPE)	*FF100210R
CF4		4822 157 11047	SFM2-450BL	*FF100220R
			DIODES	
D1		4822 130 82703	Zener UZ15BSB	*HD301080R
D2		4822 130 30621	1N4148	QP13030621
D3D		4822 130 82703	Zener UZ15BSB	*HD301080R
VD1/VD2		4822 130 82772	SVC321SPA	HD40006030
			INTEGRATED CIRCUITS	
FE1	SR48U	nsp	FTA4-506H (USA)	*AW000140R
FE1	SR38/02B SR48/02B	4822 210 10843	FTA4-460H (EUROPE)	*AW000150R
IC1		4822 209 17163	LM7001M	*HC104650R
IC2		4822 209 71785	LA1266G	HC10222030
IC3		4822 209 73434	LA3401	*HC104640R
IC4D	SR38/02B SR48/02B	4822 209 33842	TDA7330BD	QP20933842
			COIL	
L1C		nsp	Jumper	nsp

POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
L1C	SR38/02B SR48/02B	4822 157 71893	20.8mH	*LC106500R
T1		4822 157 71881	AM-ANT Coil	*TC000150R
T2		4822 157 71888	AM-OSC Coil	*TC000160R
T3		4822 157 71896	AM-IFT Coil	*TC000200R
T4		4822 146 10773	FM-DET-A Coil	*TC000250R
T5		4822 146 10772	FM-DET-B Coil	*TC000260R
T6L/R		4822 157 11049	MPX(19/38k) Coil	*TC000270R
			TRANSISTORS	
Q1/2		4822 130 42431	2SC1740S NPN	HT317402F0
Q3		4822 130 62294	KTC1923Y NPN	HT318091P0
Q4-6		4822 130 62787	KRA107M NPN	*BA000190R
Q7D	SR38/02B SR48/02B	4822 130 42431	2SC1740S NPN	HT317402F0
Q8L/R		4822 130 61723	DTC323TS NPN	BA20028210
Q9		4822 130 62787	KRA107M NPN	*BA000190R
			RESISTORS	
R1		nsp	100k ohm 1/5W J	nsp
R2		nsp	5.6k ohm 1/5W J	nsp
R3		nsp	22k ohm 1/5W J	nsp
R4		nsp	100k ohm 1/5W J	nsp
⚠ R5		4822 052 10471	470 ohm 1/5W J	GG05471160
R6		nsp	100k ohm 1/5W J	nsp
R7		nsp	10k ohm 1/5W J	nsp
R8		nsp	270 ohm 1/5W J	nsp
R9		nsp	560 ohm 1/5W J	nsp
R10		nsp	1k ohm 1/5W J	nsp
R11	SR48U	nsp	180 ohm 1/5W J	nsp
R11	SR38/02B SR48/02B	nsp	100 ohm 1/5W J	nsp
R12		nsp	560 ohm 1/5W J	nsp
R13		nsp	3.3k ohm 1/5W J	nsp
R14		nsp	560 ohm 1/5W J	nsp
⚠ R15		4822 052 10471	470 ohm 1/5W J	GG05471160
R16		nsp	100 ohm 1/5W J	nsp
R17-19		nsp	1k ohm 1/5W J	nsp
R20		nsp	330 ohm 1/5W J	nsp
R21		nsp	270 ohm 1/5W J	nsp
⚠ R22		4822 052 10471	470 ohm 1/5W J	GG05471160
R24		nsp	4.7k ohm 1/5W J	nsp
R25		nsp	68k ohm 1/5W J	nsp
R26	SR48U	nsp	33k ohm 1/5W J	nsp
R26	SR38/02B SR48/02B	nsp	39k ohm 1/5W J	nsp
R27		nsp	10k ohm 1/5W J	nsp
R28		nsp	22k ohm 1/5W J	nsp
R29		nsp	22 ohm 1/5W J	nsp
R30		nsp	4.7k ohm 1/5W J	nsp
R31	SR48U	nsp	10k ohm 1/5W J	nsp
R31	SR38/02B SR48/02B	nsp	2.7k ohm 1/5W J	nsp
R32		nsp	5.6k ohm 1/5W J	nsp
R33		nsp	3.3k ohm 1/5W J	nsp
R34		nsp	100 ohm 1/5W J	nsp
R35C	SR38/02B SR48/02B	nsp	1.8k ohm 1/5W J	nsp
R36D	SR38/02B SR48/02B	nsp	47k ohm 1/5W J	nsp
R37D	SR38/02B SR48/02B	nsp	22 ohm 1/5W J	nsp
R38D	SR38/02B SR48/02B	nsp	1k ohm 1/5W J	nsp
R39		nsp	100 ohm 1/5W J	nsp
R40		nsp	47k ohm 1/5W J	nsp
R41		nsp	22k ohm 1/5W J	nsp
R42		nsp	3.3k ohm 1/5W J	nsp
R43		nsp	22k ohm 1/5W J	nsp
R44		nsp	47k ohm 1/5W J	nsp
R46L/R	SR48U	nsp	120k ohm 1/5W J	nsp
R46L/R	SR38/02B SR48/02B	nsp	220k ohm 1/5W J	nsp
R47L/R	SR48U	nsp	180k ohm 1/5W J	nsp
R47L/R	SR38/02B SR48/02B	nsp	270k ohm 1/5W J	nsp
R48L/R		nsp	2.7k ohm 1/5W J	nsp
R49L/R		nsp	3.3k ohm 1/5W J	nsp
R50D	SR38/02B SR48/02B	nsp	680 ohm 1/5W J	nsp
R52D/53D	SR38/02B SR48/02B	nsp	10k ohm 1/5W J	nsp

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POS. NO.	VERS. COLOR	PART NO. (PCS)	DESCRIPTION	PART NO. (MJI)
R56D	SR38/02B SR48/02B	nsp	2200k ohm 1/5W J	nsp
R57L/R		nsp	1.5k ohm 1/5W J	nsp
			SEMI FIXED VARIABLE RESISTORS	
VR1		4822 101 11855	5K(B)-H	*RA000810R
VR2		4822 100 12294	50K(B)-H	*RA000670R
VR3		4822 101 11757	200K(B)-H	*RA000710R
			MISCELLANEOUS	
TC1		nsp	10pF	nsp
X1		4822 242 10735	X7M2	*JX000390R
X2		4822 242 81117	CS8456F	FQ04563010
X3D		4822 242 10608	X4M332	*JX000400R
			PCB7 ASSEMBLY P.C.BOARD FRONT	
			CAPACITORS	
C301		nsp	4.7uF 50V M	nsp
C302/303		nsp	1000pF 50V J	nsp
C304		4822 124 11552	0.047uF 5.5V	*EX000020R
C305		nsp	100uF 10V M	nsp
C306		nsp	0.1uF 50V Z	nsp
C307/308		nsp	0.0047uF 100V J	nsp
C309L/R		nsp	4.7uF 16V M	nsp
C310L/R		nsp	100pF 50V J	nsp
C311L/R		nsp	47pF 50V J	nsp
C312L/R		nsp	4.7uF 16V M	nsp
C313L/R		nsp	4.7uF 16V M	nsp
C314L/R		nsp	0.018uF 63V J	nsp
C315L/R		nsp	0.082uF 63V J	nsp
C316L/R		nsp	0.0033uF 63V J	nsp
C317L/R		nsp	0.018uF 63V J	nsp
C318/319		nsp	47uF 16V M	nsp
C320-322		nsp	0.1uF 50V Z	nsp
C323		nsp	1uF 50V M	nsp
C324		nsp	0.1uF 50V Z	nsp
C351		nsp	10uF 50V M	nsp
			CONNECTORS	
CN100	SR48U	nsp	CNT WIRE 7.92mm 2P	nsp
CN100	SR38/02B SR48/02B	nsp	CNT WIRE 7.92mm 2P	nsp
CN301		nsp	CNT FPC 1.25mm 15P	nsp
CN302		nsp	CNT WIRE 2.5mm 7P	nsp
CN303		nsp	CNT WIRE 2mm 4P	nsp
CN702		nsp	CNT WAFER 2.5mm SPCKFT BTB TKC-V10X-A1	nsp
			DIODES	
D301-314		4822 130 30621	1N4148	QP13030621
LED301		4822 130 10854	LED SLR-34URCF	*HI100710R
			INTEGRATED CIRCUITS	
IC301		4822 209 17321	CPU uPD78042FGF	*HC104290R
IC302		4822 209 73064	NJM2068	HC10053090
			TRANSISTORS	
Q301		4822 130 42431	2SC1740S NPN	HT317402F0
Q302		4822 130 62503	DTC114YS NPN	*BA000210R
Q303		4822 130 62787	KRA107M PNP	*BA000190R
Q304		4822 130 62503	DTC114YS NPN	*BA000210R
			RESISTORS	
R301		nsp	10k ohm 1/5W J	nsp
R302		nsp	330 ohm 1/5W J	nsp
R303/304		nsp	100k ohm 1/5W J	nsp
R305-308		nsp	47k ohm 1/5W J	nsp
R309-311		nsp	100k ohm 1/5W J	nsp
R312		nsp	220 ohm 1/5W J	nsp
R313-316		nsp	4.7k ohm 1/5W J	nsp
R318L/R		nsp	1k ohm 1/5W J	nsp
R319L/R		nsp	100k ohm 1/5W J	nsp
R320L/R		nsp	1000k ohm 1/5W J	nsp
R321L/R		nsp	47k ohm 1/5W J	nsp
⚠ R322L/R		4822 052 10471	470 ohm 1/5W J	GG05471160
R323		nsp	68k ohm 1/5W J	nsp
R323L/R		nsp	100k ohm 1/5W J	nsp
R324		nsp	68k ohm 1/5W J	nsp
R324L/R		nsp	22k ohm 1/5W J	nsp
R325		nsp	68k ohm 1/5W J	nsp
R325L/R		nsp	3.9k ohm 1/5W J	nsp
R326		nsp	68k ohm 1/5W J	nsp
R326L/R		nsp	2.2k ohm 1/5W J	nsp
R327L/R		nsp	560 ohm 1/5W J	nsp
R328L/R		nsp	1.2k ohm 1/5W J	nsp
R329/330		nsp	220 ohm 1/5W J	nsp
R331		nsp	330 ohm 1/5W J	nsp
R332/333		nsp	100k ohm 1/5W J	nsp
			MISCELLANEOUS	
RMC301		4822 218 12013	CRV1G353-00B 36kHz	*HW100390R
FL101		4822 135 00265	FL Display	*HQ300280R
XTAL301		4822 242 73769	CST4M19	*FQ000110R
SW301	SR38/02B SR48/02B	4822 276 13661	SWITCH TACT	*SP000610R
SW302		4822 276 13661	SWITCH TACT	*SP000610R
SW303		4822 276 13661	SWITCH TACT	*SP000610R
SW304		4822 276 13661	SWITCH TACT	*SP000610R
SW305	SR38/02B SR48/02B	4822 276 13661	SWITCH TACT	*SP000610R
SW306		4822 276 13661	SWITCH TACT	*SP000610R
SW307		4822 276 13661	SWITCH TACT	*SP000610R
SW308		4822 276 13661	SWITCH TACT	*SP000610R
SW309	SR38/02B SR48/02B	4822 276 13661	SWITCH TACT	*SP000610R
SW310		4822 276 13661	SWITCH TACT	*SP000610R
SW311		4822 276 13661	SWITCH TACT	*SP000610R
SW312		4822 276 13661	SWITCH TACT	*SP000610R
SW313		4822 276 13661	SWITCH TACT	*SP000610R
SW314		4822 276 13661	SWITCH TACT	*SP000610R
⚠ SW351		4822 276 14087	SWITCH POWER	*SP000830R

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